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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

BOB STUMP, CHAIRMAN
GARY PIERCE
BRENDA BURNS
BOB BURNS
SUSAN BITTER SMITH

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ARIZONA CORPORATION COMMISSION
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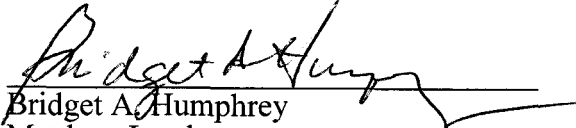
IN THE MATTER OF THE APPLICATION OF
CHAPARRAL CITY WATER COMPANY FOR A
DETERMINATION OF THE CURRENT FAIR
VALUE OF ITS UTILITY PLANT AND
PROPERTY AND FOR INCREASE IN ITS RATES
AND CHARGES BASED THEREON.

DOCKET NO. W-02113A-13-0118

**STAFF'S NOTICE OF FILING
DIRECT TESTIMONY**

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby files the Direct Testimony of Staff witnesses Gerald W. Becker, Katrin Stukov and John A. Cassidy in the above-referenced matter.

RESPECTFULLY SUBMITTED this 18th day of December, 2013.

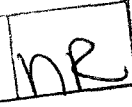

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Arizona Corporation Commission
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BEFORE THE ARIZONA CORPORATION COMMISSION

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Chairman

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INCREASE IN ITS RATES AND CHARGES)
BASED THEREON)
_____)

DIRECT

TESTIMONY

OF

GERALD BECKER

EXECUTIVE CONSULTANT

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

DECEMBER 18, 2013

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**EXECUTIVE SUMMARY
CHAPARRAL CITY WATER COMPANY
DOCKET NO. W-02113A-13-0118**

Chaparral City Water Company ("CCWC" or "Company"), is a certificated Arizona public service corporation that provides water service in the Town of Fountain Hills in Maricopa County. The average number of customers per Company during the test year was approximately 13,600 customers in its 19 square mile service territory.

On April 26, 2013, CCWC filed an application for a rate increase using a test year ending December 31, 2012. Staff issued its letter of sufficiency on May 28, 2013.

CCWC states that it experienced an \$889,596 test year operating income resulting in a 3.26 percent rate of return. CCWC proposes a revenue increase of \$3,141,028 or 34.84 percent over the Company proposed test year revenues of \$9,014,985 to \$12,156,013. The Company's proposed revenue increase would produce an operating income of \$2,783,254 for a 10.21 percent rate of return on an original cost rate base ("OCRB") of \$27,269,321. The Company proposes to use OCRB as its fair value rate base.

Staff recommends a revenue increase of \$1,033,235 or 11.46 percent over the test year revenues of \$9,014,985 to \$10,048,220. The Staff recommended revenue increase would produce an operating income of \$2,013,309 for an 8.00 percent rate of return on a Staff adjusted OCRB of \$25,166,359.

INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Gerald Becker. I am an Executive Consultant III employed by the Arizona Corporation Commission ("Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as an Executive Consultant III.

A. I am responsible for the examination and verification of financial and statistical information included in utility rate applications. In addition, I develop revenue requirements, and prepare written reports, testimonies, and schedules that include Staff recommendations to the Commission. I am also responsible for testifying at formal hearings on these matters.

Q. Please describe your educational background and professional experience.

A. I received a Masters of Business Administration with an emphasis in Accounting from Pace University. I am a Certified Public Accountant and a Certified Internal Auditor. I am a member of the Arizona State Society of Certified Public Accountants.

I have participated in multiple rate, financing and other regulatory proceedings. I attended the National Association of Regulatory Utility Commissioners ("NARUC") Utilities Rate School.

I began employment with the Commission as a utilities regulatory analyst in April 2006. Prior to joining the Commission, I worked as an Auditor at the Department of Economic Security and Department of Revenue in the Taxpayer Assistance Section. Prior to those

1 jobs, I worked for 15 years as an Auditor, Analyst, Financial Analyst, and Budget
2 Manager at United Illuminating, an investor-owned electric company in New Haven, CT.

3
4 **Q. What is the scope of your testimony in this case?**

5 A. I am presenting Staff's analysis and recommendations in the areas of rate base, operating
6 revenues and expenses, revenue requirement, and rate design recommendations in the rate
7 case. Staff witness Katrin Stukov is presenting Staff's engineering analysis and
8 recommendations. Staff witness John Cassidy is presenting Staff's recommendations
9 regarding cost of capital.

10
11 **Q. What is the basis of your recommendations?**

12 A. I performed a regulatory audit of the Company's application to determine whether
13 sufficient, relevant, and reliable evidence exists to support the Company's requested rate
14 increase. The regulatory audit consisted of examining and testing the financial
15 information, accounting records, and other supporting documentation and verifying that
16 the accounting principles applied were in accordance with the Commission-adopted
17 NARUC Uniform System of Accounts ("USOA"). I also reviewed the Company's
18 financing applications to determine the propriety and financial impacts of the proposed
19 transactions.

20
21 **BACKGROUND**

22 **Q. Please review the background of these applications.**

23 A. Chaparral City Water Company ("CCWC" or "Company"), is a certificated Arizona
24 public service corporation that provides water service to customers in the Town of
25 Fountain Hills in Maricopa County. CCWC is a wholly owned subsidiary of EPCOR
26 Water (USA) Inc. ("EWUS").

1 The Company's current rates were authorized in Decision No. 72258, dated April 7,
2 2011¹. That Decision authorized a \$1,883,020 revenue increase that provided a 7.52
3 percent rate of return on a \$27,506,414 fair value rate base, which was the average of the
4 original cost rate base and the replacement cost new rate base amount.

5
6 **CONSUMER SERVICE**

7 **Q. Please provide a brief history of customer complaints received by the Commission**
8 **regarding the Company.**

9 A. A search of Consumer Services complaint files reveals the following customer complaints
10 against Chaparral:

11
12 2010 – two complaints- disconnects/terminations

13
14 2012 – eight complaints – seven (billing), one (quality of service)

15
16 2013 – two complaints – one (billing), one (disconnects/terminations)
17 ten opinions - (rate case items – opposed)

18
19 All complaints have been resolved and closed.

20
21 **COMPLIANCE**

22 **Q. Please provide a summary of the compliance status of the Company.**

23 A. A check of the Utilities Division Compliance Database indicates that there are currently
24 no delinquencies for the Company.

¹ See Decision No. 72258, Exhibit A, Scenario 3 in column (F) which superseded the "Restated Decision (No. 71308)" as shown in Decision No. 72258, Exhibit A, Column [C].

RATE APPLICATION

Q. What are the primary reasons for the Company's requested permanent rate increase?

A. The Company's application states that during the test year, it earned only a 3.21 percent rate of return due to declining water sales, increases in its expenses, and over \$15 million in water infrastructure investments added since its last rate case.

SUMMARY OF PROPOSED REVENUES

Q. Please summarize the Company's filing.

A. The Company proposes a revenue increase of \$3,141,028 or 34.84 percent over the Company proposed test year revenues of \$9,014,985 to \$12,156,013. The Company's proposed revenue increase would produce an operating income of \$2,783,254 for a 10.21 percent rate of return on an original cost rate base ("OCRB") of \$27,269,321.

Q. Please summarize Staff's recommended revenue.

A. Staff recommends a revenue increase of \$1,033,235 or 11.46 percent over the test year revenues of \$9,014,985 to \$10,048,220. The Staff recommended revenue increase would produce an operating income of \$2,013,309 for an 8.00 percent rate of return on a Staff adjusted OCRB of \$25,166,359.

Q. What test year did the Company use in this filing?

A. The Company rate filing is based on the twelve months ended December 31, 2012 ("test year").

1 **Q. Please summarize the rate base and operating income recommendations and**
2 **adjustments addressed in your testimony for the Company.**

3 **A. My testimony addresses the following issues:**

4
5 Utility Plant in Service ("UPIS") – There are three adjustments made to UPIS. One is to
6 reclassify certain items of plant that are reclassified from capstone account 330,
7 Distribution Reservoirs and Standpipes to account 330.1, Storage Tanks with a zero net
8 impact on total UPIS. The second adjustment is based on analysis by Staff that UPIS
9 should be adjusted by \$948,719 to reflect plant not yet in service. The third adjustment
10 recalculates and reclassifies several plant items among various NARUC accounts and
11 results in a net increase to UPIS of \$9,733. The net of these plant three plant adjustments
12 decreases UPIS by \$938,986 from \$69,502,064 to \$68,563,078.

13
14 Accumulated Depreciation – This adjustment recalculates that Company's amount to
15 reflect Staff's recalculation of the Company's Accumulated Depreciation account balance.
16 Staff adjustment increases Accumulated Depreciation by \$413,339 from \$25,734,123 to
17 \$26,147,462.

18
19 Deferred Debits – This adjustment decreases the Deferred Debits by \$607,898 from
20 \$686,104 to \$78,206 to remove the Company's proposal to include \$607,898 for the
21 unamortized balance of Post-in-Service Allowance for Funds Used during Construction
22 ("AFUDC") and depreciation expense for Utility Plant in Service investments made
23 between rate cases.

24
25 Working Capital – This adjustment decreases the cash working capital component of
26 Working Capital by \$142,739 from \$1,009,341 to \$866,602.

1 Purchased Water Expense – The net adjustment increases Purchased Water Expense by
2 \$50,926 from \$1,065,953 to \$1,116,879 and is net of an increase of \$90,524 offset by a
3 decrease of \$39,598. The increase of \$90,524 is made to reflect the latest Central Arizona
4 Project (“CAP”) rates to be in effect in 2014 when the rates in this proceeding are
5 expected to become effective. The Company had previously estimated the cost of
6 purchased water based on information that was available at the time it filed its application
7 but subsequently learned that the CAP rates had increased further. This adjustment
8 reflects the latest available information and increases Purchased Water Expense by
9 \$90,524 from \$1,065,953 to \$1,156,477. The adjusted amount of \$1,156,477 is reduced
10 by \$39,598 to \$1,116,879 to remove purchased water costs related to continuing high
11 water losses.

12
13 Fuel and Power – This adjustment reduces Fuel and Power Expense by \$20,746 from
14 \$605,885 to \$585,139 to remove the purchased pumping power costs related to continuing
15 high water losses.

16
17 Chemicals – This adjustment reduces Chemicals Expense by \$4,084 from \$119,266 to
18 \$115,182 to remove the chemical expenses related to continuing high water losses.

19
20 Intercompany Support Services – This adjustment reduced Intercompany Support Services
21 by \$89,517 from \$500,330 to \$410,813 to remove incentive compensation paid to
22 employees but not adequately explained or supported by the Company.

23
24 Depreciation Expense – This adjustment decreases Depreciation Expense by \$511,261
25 from \$2,014,048 to \$1,502,787.

26

1 Property Tax Expense – This adjustment decreases property tax expenses by \$18,828 from
2 \$251,038 to \$232,210 to reflect the property tax obligation on Staff's adjusted test year
3 taxable income and to reflect an 18.5 percent assessment valuation that is expected to
4 apply to prospective revenues.

5
6 Income Tax Expense – This adjustment increases income tax expense by \$96,306 from
7 \$389,412 to \$485,718 to reflect income tax obligation on Staff's adjusted test year taxable
8 income and to reflect a 6.5 percent state income tax rate that is expected to apply to
9 prospective earnings.

10
11 **RATE BASE**

12 *Fair Value Rate Base*

13 **Q. Did the Company prepare schedules showing the elements of Reconstruction Cost**
14 **New Rate Base?**

15 A. No, the Company did not. The Company requested that their original cost rate bases be
16 treated as their fair value rate bases.

17
18 *Rate Base Summary*

19 **Q. Please summarize Staff's adjustments to the Company's rate base shown on**
20 **Schedules GWB-3 and GWB-4.**

21 A. Staff made adjustments to reduce the Company's rate base by \$2,102,962 from
22 \$27,269,321 to \$25,166,359 as shown on Schedules GWB-3 and GWB-4.

23

Rate Base Adjustments – Utility Plant in Service (“UPIS”)

Q. What amount of UPIS did the Company include in its rate base?

A. The Company included \$69,502,064 in its UPIS which included actual UPIS of \$65,617,301 plus \$3,884,763 for post-test year plant.

Q. Did Staff identify adjustments to UPIS?

A. Yes. Staff identified adjustments to reclassify \$6,235,113 from capstone account 330, Distribution Reservoirs and Standpipes to account 330.1, Storage Tanks, as shown on Schedules GWB-4 and GWB-5. Staff also identified adjustments to UPIS for post-test year plant not yet completed and reduces UPIS by \$948,719 from the Company’s proposed test year plant of \$3,884,763 to \$2,936,044 as shown on Schedules GWB-4 and GWB-6. Staff also recalculated and reclassified UPIS among various UPIS accounts with a net increase to UPIS of \$9,733, as shown on Schedules GWB-4 and GWB-7. Also shown on Schedules GWB-4 and GWB-7, Staff recalculates Accumulated Depreciation balance by NARUC account, and Staff also identifies certain plant items that are fully depreciated and no longer subject to depreciation expense, as shown on Schedule GWB-7 and GWB-16.

Rate Base Adjustment No. 1 – Reclassification

Q. Please explain Staff’s recommended reclassification of UPIS.

A. Reclassification:

To reclassify certain items of plant from capstone account 330, Distribution Reservoirs and Standpipes to account 330.1, Storage Tanks, Staff recommends decreasing Account 330, Distribution Reservoirs and Standpipes by \$6,235,113 from \$6,235,113 to zero and increasing Account 330.1, Storage Tanks by and account by \$6,235,113 from zero to

1 \$6,235,113. This reclassification provides a basis on which to depreciate this amount, as
2 the capstone account does not bear its own depreciation rate.

3
4 *Rate Base Adjustment No. 2 – Post-Test Year Plant*

5 **Q. Please explain Staff's recommended adjustment to post-test year plant.**

6 A. Post-Test Year Plant:

7
8 Staff recommends a decrease to UPIS of \$948,719 from the Company's proposed test year
9 plant of \$3,884,763 to \$2,936,044, as shown on Schedules GWB-4 and GWB-6. These
10 adjustments are based on the Company's response to a Staff data request and a review of
11 the Company's post-test year amounts. Staff recommends the following adjustments
12 related to post-test year plant reflected in the following NARUC accounts, as shown on
13 Schedules GWB-4 and GWB-6.

14
15 Account 304 Structures and Improvements - General – Staff recommends increasing this
16 account by \$39,378 from \$826,312 to \$865,690 for post-test year plant Office and
17 Operations Center plant originally contemplated in Account 331 Transmission and
18 Distribution Mains but more appropriately recorded in Account 304 Structures and
19 Improvements- General.

20
21 Account 311 - Pumping Equipment – Staff recommends reducing this account by
22 \$130,000 from \$6,056,668 to \$5,926,668 for the project the Company describes as an
23 Electrical Annual Program that has not yet been completed.

24
25 Account 320.1 - Water Treatment Equipment – Staff recommends a net decrease of
26 \$114,071 from \$6,960,463 to \$6,846,392. The net decrease consists of a decrease of

1 \$335,646 offset by an increase of \$221,575. Staff recommends reducing this account by
2 \$335,646 because in its post-test year plant amounts, the Company proposes to include
3 \$59,369 and \$350,000 for Shea Water Treatment Plant Filter Media and Shea Water
4 Treatment Plant Improvement, respectively, for a total of \$409,369, but has spent \$73,035
5 and \$688 for its Shea Water Treatment Plant Filter Media and Shea Water Treatment Plant
6 Improvement, respectively, for a total of \$73,723. Deducting the total spent of \$73,723
7 from the proposed amount of \$409,369 results in a reduction of \$335,646 to the account.
8 Staff recommends increasing this account by \$221,575 to reflect additional costs incurred
9 for the Well No. 10 Arsenic Treatment plant from \$793,374 to \$1,014,949.

10
11 Account 330.1 - Storage Tanks – Staff recommends a net decrease of \$390,624 from
12 \$6,235,113 to \$5,844,489 to reflect the net impact of two adjustments. Staff recommends
13 an increase of \$96,376 from \$595,860 to \$692,236 to reflect additional costs incurred for
14 the rehabilitation of Reservoir No. 2, to reflect actual costs incurred to date. Staff also
15 recommends a decrease of \$487,000 from \$650,000 to \$163,000 for 2013 Recurring
16 Projects – Facilities.

17
18 Account 331 - Transmission and Distribution Mains – Staff recommends a net increase of
19 \$223,733 from \$24,744,309 to \$24,968,041, to reflect actual costs incurred to date. In its
20 schedule of post-test year plant, the Company proposes \$53,577 and \$300,000 for (its)
21 Distribution System and Distribution Improvements, respectively, for a total of \$353,577.
22 Staff recommends \$66,964 for Distribution System, \$1,453 for Distribution
23 Improvements, \$212,350 for Miscellaneous System Improvements, \$93,715 for main
24 breaks, \$4,633 for new valves, \$144,905 of valve replacements, and \$53,290 of mains, for
25 a total of \$577,310 and a net increase of \$223,733.
26

1 Account 333 - Services – Staff recommends a decrease of \$328,325 from \$11,300,767 to
2 \$10,972,442. In its schedule of post-test year plant, the Company proposes to include
3 \$410,000, and Staff recommends a reduction of \$328,325 from \$410,000 to \$81,675 to
4 reflect actual costs incurred to date.

5
6 Account 334 - Meters – Staff recommends a decrease of \$271,726 from \$3,216,068 to
7 \$2,944,342. In its schedule of post-test year plant, the Company proposes to include
8 \$300,000 of meter replacements, and Staff recommends a reduction of \$271,726 from
9 \$300,000 to \$28,274 to reflect actual costs incurred to date.

10
11 Account 335 - Hydrants – Staff recommends an increase of \$523 from \$2,029,913 to
12 \$2,030,436. In its schedule of post-test year plant, the Company proposes to include
13 \$10,000 of hydrants, and Staff recommends an increase of \$523 from \$10,000 to \$10,523
14 to reflect actual costs incurred to date.

15
16 Account 339 - Other Transmission and Distribution Plant – Staff recommends a decrease
17 of \$22,319 from \$132,558 to \$110,239. In its schedule of post-test year plant, the
18 Company proposes to include \$132,558 for a Comprehensive Planning Study. Although,
19 the Company indicates in response to a Staff data request that it had spent a total of
20 \$220,478, the Company also indicates that part of the study includes a review of Well No.
21 11 which is out of service. For this reason, Staff recommends a 50 percent disallowance
22 of the reported spending of \$220,478, or \$110,239, to leave \$110,239 in the account
23 balance.

24
25 Account 341 - Transportation Equipment – Staff recommends an increase of \$389 from
26 \$503,910 to \$504,299. In its schedule of post-test year plant, the Company proposes to

1 include \$9,248 of equipment, and Staff recommends an increase of \$389 from \$9,248 to
2 \$9,637 to reflect actual costs incurred to date.

3
4 Account 343 - Power Operated Tools and Equipment – Staff recommends an increase of
5 \$48,151 from \$222,439 to \$270,590. In its schedule of post-test year plant, the Company
6 proposes to include \$31,777 of tools and equipment, and Staff recommends an increase of
7 \$48,151 from \$31,777 to \$79,928 to reflect actual costs incurred to date.

8
9 Account 346 - Communications Equipment – Staff recommends a decrease of \$3,828
10 from \$102,326 to \$98,498. In its schedule of post-test year plant, the Company proposes
11 to include \$59,000 for its Internet Protocol Telephony (“IPT”) Deployment. Staff
12 recommends \$44,932 for its IPT Deployment and \$10,240 for Supervisory Control and
13 Data Acquisition System and Firewall project, for a total of \$55,172, for a net decrease of
14 \$3,828 to reflect actual costs incurred to date.

15
16 *Rate Base Adjustment No. 3 – Recalculation of UPIS and Accumulated Depreciation*

17 UPIS

18 **Q. Would you please review the pertinent background information associated with the**
19 **Company’s UPIS included in the application by the Company for a rate increase?**

20 **A.** The Company provided Schedule E-5 as part of the rate application. The schedule
21 represents the balances of individual NARUC plant accounts as of December 31, 2012.
22 Schedule E-5 is exclusive of post-test year plant.
23

1 **Q. During the processing of the application, did the Company provide other**
2 **information regarding the plant balances?**

3 A. Yes, in response to data requests from Staff and the Residential Utilities Consumer Office
4 (“RUCO”), the Company provided additional schedules detailing UPIS as of December
5 31, 2012. However, Staff notes that as of this writing there are outstanding requests for
6 copies of invoices substantiating additions to UPIS, and Staff reserves the opportunity to
7 make adjustments in its surrebuttal testimony based on the Company’s responses, or lack
8 thereof, to outstanding data requests.

9
10 **Q. Did the supporting schedules actually provided by the Company calculate to the**
11 **amount included on Schedule E-5 of the application?**

12 A. No, and as a result, Staff recommends adjustments to the gross UPIS as indicated on
13 Schedules GWB-4 Column [E] and GWB-7.

14
15 **Q. Please summarize Staff recommended adjustments to UPIS.**

16 A. Staff recommends adjustments in two areas:

17
18 The Company provided a plant ‘roll forward’ schedule that uses the UPIS balance in the
19 prior test year (2006) as its starting point but excludes from its starting point adjustments
20 approved in the last rate case and instead treats those adjustments related to the 2006 test
21 year Additions, Retirements, and Adjustments in subsequent years.

22
23 Using the Company’s schedule of plant additions, retirements, and adjustments since the
24 last rate case, Staff eliminates certain activity identified by the Company as relating to the
25 prior rate case, and Staff developed its own ‘roll forward’ schedule starting with UPIS
26 amounts as January 1, 2007, to reflect amounts approved in the last rate case (net of all

1 adjustments approved in the prior proceeding). Staff's results did not match the amounts
2 shown on the Company application Schedule E-5 and Staff recommends adjustments to
3 the UPIS.

4
5 The Company's schedule did not include retirements disclosed by an external audit of the
6 Company as of December 31, 2012. These retirements are described as an "audit
7 misstatement" of two vehicles sold but not removed from the accounts. The Company did
8 not include this adjustment in the application schedule E-5, and has agreed to a decrease to
9 plant balance in the amount of \$77,349 in Account 341 Transportation Equipment.

10
11 **Q. What does Staff recommend?**

12 A. Staff recommends the adoption of the UPIS and Accumulated Depreciation balances
13 (discussed below) as recalculated by Staff to reflect adjustment to UPIS in the last rate
14 case becoming effective with the test year used in the last rate case, along with the
15 retirements for plant retirements not recorded as shown on Schedule GWB-7.

16
17 **ACCUMULATED DEPRECIATION**

18 **Q. Would you please review the pertinent background information associated with the**
19 **Company's accumulated depreciation and depreciation expense included in the**
20 **application for a rate increase?**

21 A. The Company's application included Schedule B-2, indicating accumulated depreciation
22 in the amount of \$25,734,123 and Company Schedule C-2, showing that the Company
23 expects to incur depreciation expense of \$2,484,451 on a going forward basis.
24

1 **Q. Please provide a brief summary of Staff adjustments to Accumulated Depreciation**
2 **and the impact on depreciation expense.**

3 A. Staff calculated Accumulated Depreciation since the last rate case ending in test year
4 December 31, 2006. Some groups of assets were fully depreciated by the end of test year
5 ending December 31, 2012, and Staff stopped accumulating depreciation for these asset
6 groups. Going forward, Staff eliminated the fully depreciated plant amounts from its
7 calculation of test year depreciation expense. Staff recommends an increase of \$413,339
8 from \$25,734,123 to \$26,147,462.

9
10 **Q. What amount of Accumulated Depreciation did the Company propose?**

11 A. The Company proposes \$25,734,123 of Accumulated Depreciation.
12

13 **Q. Did Staff identify adjustments to Accumulated Depreciation?**

14 A. Yes. Staff recommends an increase of \$413,339 from \$25,734,123 to \$26,147,462.
15

16 **Q. Does Staff recommend that depreciation expense no longer be recorded on certain**
17 **plant based on its review of Accumulated Depreciation balances?**

18 A. Yes. Staff recommends that certain plant no longer be subject to depreciation as discussed
19 more fully below. These fully depreciated plant items are also removed from depreciable
20 balances as shown on Column [B] of Schedule GWB-16.
21

22 **Q. Did Staff adjust Accumulated Depreciation and depreciation expense for NARUC**
23 **account 341 Transportation Equipment?**

24 A. Yes, NARUC account 341 Transportation Equipment is depreciated at a rate of 20 percent
25 per year. Since it is over five years since the last rate case, the amount in plant from the
26 year 2008 and prior year would be fully depreciated at the end of 2012. Staff calculated

1 the amount of \$400,233 as fully depreciated plant in this account. Staff recommends that,
2 for rate making purposes, no further depreciation be calculated on this amount of plant and
3 that the amount be removed from the calculation of depreciation expense.

4
5 **Q. Did Staff adjust Accumulated Depreciation and depreciation expense for NARUC**
6 **account 340 Office Furniture and Equipment?**

7 A. Yes, NARUC account 340 Office Furniture and Equipment shows a gross plant amount of
8 \$272,173 and accumulated depreciation of \$392,544. Retirements of \$5,200 in 2007 and
9 \$2,266 in 2008 were removed from plant and accumulated depreciation of the 2006 rate
10 case, leaving an amount of \$264,394 in gross plant and \$385,078 in accumulated
11 depreciation. Staff recommends that, for rate making purposes, no further depreciation be
12 calculated on plant of \$264,394 and that this amount be removed from the calculation of
13 depreciation expense.

14
15 **Q. Please describe the amount Staff recommends be considered fully depreciated for**
16 **NARUC account 311 Pumping Equipment.**

17 A. NARUC account 311 Pumping Equipment plant balance as of the last rate case was
18 \$1,588,246 and accumulated depreciation of \$881,086. Since the last rate case in test year
19 2006, an amount of \$1,825,385 was re-classified as belonging in the account. The Plant as
20 of January 1, 2007 is \$3,413,631 ($1,588,246 + 1,825,385$) and accumulated depreciation
21 of \$1,893,726 ($\$881,086 + \$1,012,640$) or 55.48 per cent of the plant balance.

22
23 Retirements were removed from this plant account and from the accumulated depreciation
24 balance for this account. Staff calculated depreciation on the plant from January 1, 2007
25 until the year 2010. During 2010, the January 1, 2007 plant balance was fully depreciated.
26 Staff recommends that for rate making purposes, the Company no longer calculate

1 depreciation on the amount of \$3,365,052 and that this amount be removed from the
2 calculation of depreciation expense.

3
4 *Rate Base Adjustment No. 4 – AFUDC Deferral*

5 **Q. What amount of AFUDC Deferral did the Company propose to be included in its**
6 **Deferred Debits?**

7 A. The Company proposes to include \$686,104 of Deferred Debits in its rate base. This
8 includes a pro forma adjustment of \$607,898 to reflect the unamortized balance of
9 deferred Post-in-Service AFUDC and depreciation expense for investment in Utility Plant
10 in Service between rate cases. In its application the Company references its (then)
11 pending application in Docket No. W-02113A-12-0427 in which the Company seeks
12 approval of an accounting order to record certain deferrals. The Company also cites to the
13 Goodman Water case in Docket No. W-02500A-10-0082 which states that “deferral of
14 depreciation (a component of the deferral (requested)) ... is not retroactive ratemaking”.²

15
16 **Q. Does Staff agree with the Company’s proposal?**

17 A. No. Staff does not support inclusion of this Deferred Debit. Staff notes that the
18 Commission did not render a decision in the Company’s other docket No. W-02113A-12-
19 0427 and that the Commission is not bound in this proceeding by the findings in the
20 Goodman Water case in Docket No. W-02500A-10-0082. Staff also notes that on
21 November 20, 2013, Docket Nos. W-02113A-12-0427 (along with Docket Nos. W-
22 01303A-12-0427, SW-01303A-12-0427) and were administratively closed.

23

² See Company application, testimony of Thomas M. Broderick, page 22 at 10-13.

1 **Q. What does Staff recommend?**

2 A. Staff recommends a decrease of \$607,898 from \$686,104 to \$78,206 to remove the
3 Company's proposal to include \$607,898 in deferred Post-in-Service AFUDC in rate base.
4

5 *Rate Base Adjustment No. 5 – Working Capital*

6 **Q. Please describe the working capital adjustment to rate base.**

7 A. Working Capital is the collective term that typically includes amounts for prepaid
8 expenses, materials and supplies inventory, and cash working capital. Schedules GWB-
9 8A and GWB-8B provide the calculations of the Company's proposed cash working
10 capital and Staff's recommended adjustments to the cash working capital. Staff's
11 adjustments relate to the cash working capital component of Working Capital only.

12 The purpose of calculating a cash working capital allowance is to quantify the amount of
13 cash that a company needs to operate by analyzing the timing differentials between the
14 period required for revenues to be realized and collected and the periods between the date
15 that an expense is incurred and the date paid. A lead lag study summarizes the differences
16 between the collection of revenues and the payment of expenses and creates a cash
17 working capital allowance which is added to or subtracted from the Company's rate base,
18 depending on whether the allowance is positive or negative.
19

20 **Q. Did the Company provide a schedule in support of its cash working capital
21 requirement?**

22 A. Yes.
23

24 **Q. Does Staff agree with the Company's calculation of its cash working capital?**

25 A. Yes, with two exceptions, Staff agrees with the Company's calculation. Staff
26 recommends the removal of regulatory expense and the inclusion of interest expense.

1 Regulatory (or rate case) expense is non-recurring and is typically excluded from the
2 calculations of cash working capital. Although 'below the line', interest expense is
3 included as it is recovered through revenues which are included in the calculation.
4

5 **Q. What does Staff recommend?**

6 A. Staff recommends a decrease of \$142,739 from \$1,009,342 to \$866,602 to reflect the
7 reduced amount of cash working capital, as shown on Schedules GWB-4 and GWB-9.
8

9 **OPERATING INCOME**

10 *Operating Income Summary*

11 **Q. What are the results of Staff's analysis of test year revenues, expenses and operating**
12 **income for the Company?**

13 A. Staff's analysis resulted in test year revenues, expenses, and operating income of
14 \$9,014,985, \$7,628,186, and \$1,386,800, respectively.
15

16 **Q. Is Staff recommending any adjustments to operating income in this case?**

17 A. Yes. Staff recommends the following adjustments.
18

19 *Operating Income Adjustment No. 1 – Excess Water Loss*

20 **Q. Did the Company experience water losses in excess of 10 percent during the test**
21 **year?**

22 A. Yes. As described in the testimony of Staff witness Katrin Stukov, the Company
23 experienced a water loss of 13.9 percent during the test year.
24

1 **Q. Did Staff adjust Purchased Water, Purchased Power and Chemicals Expense?**

2 A. Yes. Staff reduces Purchased Power and Chemicals Expense by \$39,598, \$20,746 and
3 \$4,084, respectively.

4
5 **Q. Why did Staff adjust Purchased Water, Purchased Power and Chemicals Expense?**

6 A. The Company has water loss greater than that recommended by Staff, as discussed in
7 greater detail by Staff witness, Katrin Stukov. The cost of the purchased power used to
8 pump the water that is lost does not provide a benefit to customers; consequently Staff
9 reduced the purchased power to correspond to the portion of the water loss that is above
10 Staff's recommended maximum level of 10 percent. Similarly, the cost of chemicals to
11 treat water that is lost does not provide a benefit to customers; consequently Staff reduced
12 the purchased power to correspond to the portion of the water loss that is above Staff's
13 recommended maximum level of 10 percent. Similarly, Staff reduces the cost of
14 purchased water to account for excess water loss that does not provide a benefit to the
15 customers.

16
17 **Q. What is Staff's recommendation?**

18 A. Staff recommends decreasing the purchased water by \$39,598 from \$1,156,477 to
19 \$1,116,879, purchased power by \$20,746 from \$605,885 to \$585,139 and chemicals
20 expense by \$17,132 from \$119,266 to \$102,135, to remove the purchased pumping and
21 chemical costs related to continuing high water losses and as shown on Schedules GWB-
22 11 and GWB-12.

23

Operating Income Adjustment No. 2 – Intercompany Support Services

Q. Did Staff adjust the Intercompany Support Services Expense proposed by the Company?

A. Yes, the Company proposes to include \$89,517 incentive compensation paid to employees. The Company's response to a Staff data request seeking clarification and the reasons that this cost was necessary in order to provide safe and reliable service to its ratepayers is not yet received.

Q. What is Staff's recommendation?

A. Staff recommends a decrease of \$89,517 from \$500,330 to \$410,813 to reflect the unsupported amounts paid as incentive compensation.

Operating Income Adjustment No. 3 – Purchased Water Expense

Q. Did Staff adjust the Purchased Water Expense account?

A. Yes.

Q. What is the amount of total Purchased Water Expense proposed by the Company?

A. The Company proposes \$1,065,953 of purchased water expense. This amount was based on the latest information available to the Company when it filed its application.

Q. What adjustments did Staff make?

A. In response to a Staff data request, the Company stated that it had obtained new rates from CAGR and that the expense expected in 2014 when rates become effective has increased an additional \$90,524 from \$1,065,953 to \$1,156,477. Staff has recommended this increase as shown on Schedules GWB-11 and GWB-14. As discussed above in Operating

1 Income Adjustment No. 1, Staff reduces the adjusted balance of \$1,156,477 to \$1,116,879
2 for excess water losses, as shown on Schedules GWB-11 and GWB-12.
3

4 *Operating Income Adjustment No. 4 – Depreciation and Amortization Expense*

5 **Q. What is the Company proposing for Depreciation and Amortization Expense?**

6 A. The Company proposes Depreciation and Amortization Expense of \$2,014,048. The
7 Company's Depreciation and Amortization Expense includes \$15,641 to amortize the
8 deferral of 50 percent of charges known as Municipal and Industrial, or M&I, charges of
9 \$78,206 associated with 1,931 acre feet of CAP water over a 5 year period; plus \$23,586
10 to amortize the Company's proposed deferral of post-in-service AFUDC and Deferred
11 Depreciation of \$607,898 at the Company's proposed composite depreciation rate of 3.88
12 percent; less \$76,000 for the amortization of 50 percent of the gain of \$1,520,000 on the
13 sale of property transferred to the Fountain Hills Sanitary District, or \$760,000, to be
14 amortized over 10 years.
15

16 **Q. What adjustments did Staff make to depreciation expense?**

17 A. As discussed above in Rate Base Adjustment No. 2 and as shown on Schedules GWB-4
18 and GWB-6, Staff removed certain items of post-test year plant. Accordingly, these items
19 of plant are not included in the amounts subject to depreciation, as shown on Schedule
20 GWB-16.
21

22 As discussed above in Rate Base Adjustment No. 3, Staff has determined that certain
23 items of plant are fully depreciated and no longer subject to depreciation and has removed
24 those amounts, as shown on Schedule GWB-16.
25

1 As discussed above in Rate Base Adjustment No. 4, Staff removes \$607,898 from
2 Deferred Debits to remove the Company's proposed deferral of post-in-service AFUDC
3 and Deferred Depreciation of \$607,898. Accordingly, Staff's calculation of depreciation
4 expense does not include amortization of the Company's proposed deferral of post-in-
5 service AFUDC and Deferred Depreciation of \$607,898 at 3.88 percent, or \$23,586.

6
7 As shown on schedule GWB-16, Staff's calculation does include recognition of the
8 amortization of deferred CAP costs, or \$15,641, and the amortization of the gain on the
9 sale of property to the Fountain Hills Sanitation District of \$76,000. Staff does not
10 recommend the inclusion of the amortization of the deferral of post-in-service AFUDC
11 and Deferred Depreciation because Staff removes the deferral from its recommended rate
12 base.

13
14 **Q. What adjustments did Staff make to Depreciation and Amortization Expense?**

15 A. Staff recommends a decrease to Depreciation and Amortization Expense of \$511,261 from
16 \$2,014,048 to \$1,502,787 as shown on Schedules GWB-11 and GWB-16.

17
18 *Operating Income Adjustment No. 5 – Property Taxes*

19 **Q. Please describe the Company's proposal for Property Taxes.**

20 A. The Company proposes Property Taxes of \$251,038, reflecting an Assessment Ratio of 20
21 percent for 2013, which the Company cites to HB2784.

22
23 **Q. Does Staff agree with the Company's proposal for Property Taxes.**

24 A. No. First, Staff referred to ARS 42-15001 and notes that the Assessment Ratio for 2013 is
25 19.5 percent. Second, Staff recognizes that any rates approved in this proceeding will
26 likely be in effect starting in 2014 and through 2016 and recommends the use of

1 Assessment Ratios that will be in effect in years after 2013. The Assessment Ratios are
2 19.0 percent, 18.5 percent, and 18.0 percent for 2014, 2015, and 2016, respectively, for an
3 average Assessment Ratio of 18.5 percent.

4
5 **Q. What does Staff recommend?**

6 A. Staff recommends the use of an 18.5 percent Assessment Ratio to be used in the
7 calculation of Property Taxes for a decrease of \$18,828 from \$251,038 to \$232,210.

8
9 *Operating Income Adjustment – Income Taxes*

10 **Q. Please describe the Company's proposal for Income Taxes.**

11 A. The Company proposes Income Taxes of \$389,412. The Company proposes to use a tax
12 rate of 6.968 percent on Arizona taxable income.

13
14 **Q. Did Staff make any adjustments to test year Income Taxes?**

15 A. Yes. Staff's adjustment reflects Staff's calculation of the income tax expense based upon
16 Staff's adjusted test year taxable income. Staff also uses a tax rate of 6.5 percent on
17 Arizona taxable income, for reasons which are similar to those as described above in
18 Staff's recommended adjustment to Property Taxes.

19
20 **Q. What is Staff's recommendation?**

21 A. Staff recommends an increase of \$96,306 from \$389,412 to \$485,718 to Income Tax
22 Expense.

23

OTHER CONSIDERATIONS

Sustainable Water Surcharge

Q. Please describe the Company's proposal regarding a Sustainable Water Surcharge.

A. In its application, the Company states that its purchased water expense is significant and that it has not been recovering the full cost of its purchased water. The Company further states that the cost of its purchased water has increased at a rate that is disproportionately higher than its other O&M expenses. The Company also states that the expenses are likely to increase significantly in part due to the potential effects of EPA rulemaking on the Navajo Generating Station which provides virtually all of the electricity to the Central Arizona Water Conservation District.

The Company's proposal is for a surcharge to cover increases or decreases in its purchased water expense. Such proposal would include a tariff filing showing the annual water costs as approved in the case with the projected annual water costs for the following year, along with any cumulative deficit or surplus associated with prior under or over collections. The Company also proposes that the first SWS tariff filing would be based on the adjusted 2012 test year water expense.

Q. What is Staff recommending?

A. In essence the Company is proposing a purchase water adjustor. Since most of its water is purchased CAP water, Staff recommends that the Company file a more detailed plan of administration for its Sustainable Water Surcharge, in the form of a purchased water adjustor, as soon as possible but no later than its rebuttal testimony.

Declining Usage Adjustment –

Q. Did the Company propose a declining usage adjustment?

A. Yes. In its application, the Company proposes a declining usage adjustment based on events that occurred before the test year.

Q. Does Staff agree with the adoption of a declining usage adjustment?

A. Yes, but for reasons that are different from those offered by the Company. Staff recommends that events prior to the test year are already reflected in test year results and warrant no adjustment. Instead, Staff bases its recommendation on the Company's response to a Staff data request which sought information and confirmation that consumption patterns had continued to change during the post-test year period. Based on its review of this information, Staff recommends adoption of a declining usage adjustment proposed by the Company but on the basis of the adjustment being a post-test year event. As a post-test year event, this adjustment is based on a known and measurable change to the test year activity rather than on events that predate and are already reflected in the test year results.

Q. Does this conclude your direct testimony?

A. Yes, it does.

DIRECT TESTIMONY OF GERALD BECKER

TABLE OF CONTENTS TO SCHEDULES :

<u>SCH #</u>	<u>TITLE</u>
GWB- 1	REVENUE REQUIREMENT
GWB- 2	GROSS REVENUE CONVERSION FACTOR
GWB- 3	RATE BASE - ORIGINAL COST
GWB- 4	SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS
GWB- 5	RATE BASE ADJUSTMENT #1 RECLASSIFICATION
GWB- 6	RATE BASE ADJUSTMENT #2 POST TEST YEAR PLANT
GWB- 7	RATE BASE ADJUSTMENT #3 UPIS AND ACCUMULATED DEPRECIATION
GWB- 8	RATE BASE ADJUSTMENT #4 REVERSAL OF AFUDC AND DEFERRED DEPRECIATION DEFERRAL
GWB- 9	RATE BASE ADJUSTMENT #5 CASH WORKING CAPITAL
GWB- 10	OPERATING INCOME STATEMENT - TEST YEAR AND STAFF RECOMMENDED
GWB- 11	SUMMARY OF OPERATING INCOME ADJUSTMENTS - TEST YEAR
GWB- 12	OPERATING INCOME ADJUSTMENT #1 - EXCESS WATER LOSS
GWB- 13	OPERATING INCOME ADJUSTMENT #2 - INCENTIVE COMPENSATION
GWB- 14	OPERATING INCOME ADJUSTMENT #3 - PURCHASED WATER EXPENSE
GWB- 15	NOT USED
GWB- 16	OPERATING INCOME ADJUSTMENT #4 - DEPRECIATION EXPENSE
GWB- 17	OPERATING INCOME ADJUSTMENT #5 - INCOME TAXES
GWB- 18	OPERATING INCOME ADJUSTMENT #6 - PROPERTY TAX EXPENSE GRCF COMPONENT

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	(A) COMPANY ORIGINAL COST	(B) COMPANY FAIR VALUE	(C) STAFF ORIGINAL COST	(D) STAFF FAIR VALUE
1	Adjusted Rate Base	\$ 27,269,321	\$ 27,269,321	\$ 25,166,359	\$ 25,166,359
2	Adjusted Operating Income (Loss)	\$ 889,596	\$ 889,596	\$ 1,386,800	\$ 1,386,800
3	Current Rate of Return (L2 / L1)	3.26%	3.26%	5.51%	5.51%
4	Required Rate of Return	10.21%	10.21%	8.00%	8.00%
5	Required Operating Income (L4 * L1)	\$ 2,783,254	\$ 2,783,254	\$ 2,013,309	\$ 2,013,309
6	Operating Income Deficiency (L5 - L2)	\$ 1,893,658	\$ 1,893,658	\$ 626,509	\$ 626,509
7	Gross Revenue Conversion Factor	1.658709	1.658709	1.649195	1.649195
8	Required Revenue Increase (L7 * L6)	\$ 3,141,028	\$ 3,141,028	\$ 1,033,235	\$ 1,033,235
9	Adjusted Test Year Revenue	\$ 9,014,985	\$ 9,014,985	\$ 9,014,985	\$ 9,014,985
10	Proposed Annual Revenue (L8 + L9)	\$ 12,156,013	\$ 12,156,013	\$ 10,048,220	\$ 10,048,220
11	Required Increase in Revenue (%)	34.84%	34.84%	11.46%	11.46%
12	Rate of Return on Common Equity (%)	11.05%	11.05%	9.30%	9.30%

References:

Column [A]: Company Schedule A-1

Column (B): Company Schedule A-1

Column (C): Staff Schedules GWB-2, GWB-3, and GWB-10

LINE NO.	DESCRIPTION	(A)	(B)	(C)
<u>Calculation of Gross Revenue Conversion Factor:</u>				
1	Revenue	100.0000%		
2	Uncollectible Factor (Line 11)	0.5492%		
3	Revenues (L1 - L2)	99.4508%		
4	Combined Federal and State Income Tax and Property Tax Rate (Line 23)	38.8152%		
5	Subtotal (L3 - L4)	60.6356%		
6	Revenue Conversion Factor (L1 / L5)	1.649195		
<u>Calculation of Uncollectible Factor:</u>				
7	Unity	100.0000%		
8	Combined Federal and State Tax Rate (Line 17)	38.2900%		
9	One Minus Combined Income Tax Rate (L7 - L8)	61.7100%		
10	Uncollectible Rate	0.8900%		
11	Uncollectible Factor (L9 * L10)		0.54922%	
<u>Calculation of Effective Tax Rate:</u>				
12	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%		
13	Arizona State Income Tax Rate	6.5000%		
14	Federal Taxable Income (L12 - L13)	93.5000%		
15	Applicable Federal Income Tax Rate (Line 44)	34.0000%		
16	Effective Federal Income Tax Rate (L14 x L15)	31.7900%		
17	Combined Federal and State Income Tax Rate (L13 +L16)		38.2900%	
<u>Calculation of Effective Property Tax Factor</u>				
18	Unity	100.0000%	6.968%	
19	Combined Federal and State Income Tax Rate (L17)	38.2900%		
20	One Minus Combined Income Tax Rate (L18-L19)	61.7100%		
21	Property Tax Factor (GWB-18, L25)	0.8510%		
22	Effective Property Tax Factor (L20*L21)		0.5252%	
23	Combined Federal and State Income Tax and Property Tax Rate (L17+L22)			38.8152%
24	Required Operating Income (Schedule GWB-1, Line 5)	\$ 2,013,309		
25	Adjusted Test Year Operating Income (Loss) (Schedule GWB-10, Line 36)	\$ 1,386,800		
26	Required Increase in Operating Income (L24 - L25)		\$ 626,509	
27	Income Taxes on Recommended Revenue (Col. (C), L48)	\$ 874,456		
28	Income Taxes on Test Year Revenue (Col. (A), L48)	\$ 485,718		
29	Required Increase in Revenue to Provide for Income Taxes (L27 - L28)		\$ 388,738	
30	Required Revenue Increase (Schedule GWB-1, Line 8)	\$ 1,033,235		
31	Uncollectible Rate (Line 10)	0.8900%		
32	Uncollectible Expense on Recommended Revenue (L30 * L31)	\$ 9196		
33	Adjusted Test Year Uncollectible Expense - N/A	\$ -		
34	Required Increase in Revenue to Provide for Uncollectible Exp.		\$ 9,196	
35	Property Tax with Recommended Revenue (GWB-18, Line 21)	\$ 241,004		
36	Property Tax on Test Year Revenue (GWB-18, Col A, L19)	\$ 232,211		
37	Increase in Property Tax Due to Increase in Revenue (L35-L36)		\$ 8,793	
38	Total Required Increase in Revenue (L26 + L29 + L34+ L37)		\$ 1,033,235	
<u>Calculation of Income Tax:</u>				
39	Revenue (Sch GWB-10, Col.(C) L4, GWB-1, Col. (D), L10)	\$ 9,014,985		\$ 10,048,220
40	Operating Expenses Excluding Income Taxes	\$ 7,142,467		\$ 7,160,456
41	Synchronized Interest (L53)	\$ 603,993		\$ 603,993
42	Arizona Taxable Income (L39 - L40 - L41)	\$ 1,268,525		\$ 2,283,772
43	Arizona State Income Tax Rate	6.5000%		6.5000%
44	Arizona Income Tax (L42 x L43)	\$ 82,454		\$ 148,445
45	Federal Taxable Income (L42 - L44)	\$ 1,186,071		\$ 2,135,326
46	Federal Tax	\$ 403,264		\$ 726,011
47	Total Federal Income Tax	\$ 403,264		\$ 726,011
48	Combined Federal and State Income Tax (L43 + L47)	\$ 485,718		\$ 874,456
50	Effective Tax Rate			
<u>Calculation of Interest Synchronization:</u>				
51	Rate Base (Schedule GWB-3, Col. (C), Line 18)			N/A
52	Weighted Average Cost of Debt			\$ 25,166,359
53	Synchronized Interest (L50 X L51)			2.4000%
				\$ 603,999

RATE BASE - ORIGINAL COST

LINE NO.	(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	(C) STAFF AS ADJUSTED
1 Plant in Service	\$ 69,502,064	\$ (938,986)	\$ 68,563,078
2 Less: Accumulated Depreciation	25,734,123	413,339	26,147,462
3 Net Plant in Service	<u>\$ 43,767,941</u>	<u>\$ (1,352,326)</u>	<u>\$ 42,415,615</u>
<u>LESS:</u>			
4 Contributions in Aid of Construction (CIAC)	\$ 14,991,871	\$ -	\$ 14,991,871
5 Less: Accumulated Amortization	2,529,950	-	2,529,950
6 Net CIAC	<u>12,461,921</u>	<u>-</u>	<u>12,461,921</u>
7 Advances in Aid of Construction (AIAC)	4,008,916	-	4,008,916
8 Customer Meter Deposits	1,950		1,950
9 Deferred Income Taxes	1,271,696		1,271,696
10 FHSD Settlement	449,580		449,580
<u>ADD:</u>			
11 Working Capital Allowance	1,009,341	(142,739)	866,602
12 Deferred Debits	686,104	(607,898)	78,206
13 Original Cost Rate Base	<u>\$ 27,269,321</u>	<u>\$ (2,102,962)</u>	<u>\$ 25,166,359</u>

References:

Column (A), Company Schedule B-2
Column (B): Schedule GWB-4
Column (C): Column (A) + Column (B)

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	ACCT. NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] Reclassification ADJ #1 GWB-5	[C] Post Test Year Plant ADJ #2 GWB-6	[E] UPIS & ACC. DEPREC. ADJ #3 GWB-7	[F] ADFUC Deferral ADJ #4 GWB-8	[G] Working Capital ADJ #5 GWB-9	[I] STAFF ADJUSTED
<u>PLANT IN SERVICE:</u>									
1	303	Other Intangible Plant	1,282,734	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,282,734
2	303	Land and Land Rights	271,857						271,857
3	304	Structures and Improvements - Pumping	190,044						190,044
4	304	Structures and Improvements - Treatment	593,063						593,063
5	304	Structures and Improvements - T & D	169,971						169,971
6	304	Structures & Improvements - General	826,312		39,378	(594)			865,096
7	305	Collecting and Impounding Reservoirs	1,013,959			(11,800)			1,002,159
8	307	Wells	953,001						953,001
9	309	Supply Mains	2,201,526						2,201,526
10	311	Pumping Equipment & Other Pumping Plant	6,056,668		(130,000)	49,378			5,976,046
11	320.1	Water Treatment Equipment	6,960,463		(114,071)	6,946			6,853,337
12	330	Reservoirs and Tanks	6,235,113	(6,235,113)					-
13	330.1	Storage Tanks		6,235,113	(390,624)	2,667			5,847,156
14	331	Transmission and Distribution Mains	24,744,309		223,733	9,132			24,977,173
15	333	Services	11,300,767		(328,325)	16,750			10,989,193
16	334	Meters	3,216,068		(271,726)	3,556			2,947,898
17	335	Hydrants	2,029,913		523	11,047			2,041,483
18	339	Other Transmission & Distribution Plant	132,558		(22,319)	41,221			151,460
19	339	Other Transmission & Distribution Plant	143,521						143,521
20	340	Office Furniture and Equipment, Computers,	305,068						305,068
21	341	Transportation Equipment	503,910		389	(77,349)			426,950
22	343	Power Operated Equipment & Tool, Shop an	222,439		48,151				270,590
23	345	Power Operated Equipment	0						-
24	346	Communication Equipment	102,326		(3,828)				98,498
25	347	Other General Plant	41,221			(41,221)			0
26		Company's reconciling Adjustment	5,253						5,253
27	Total Plant in Service		69,502,064	(0)	(948,719)	9,733			68,563,078
28									
29	Accumulated Depreciation		25,734,123			413,339			26,147,462
30	Net Plant in Service		\$ 43,767,941	\$ (0)	\$ (948,719)	\$ (403,606)	\$ -	\$ -	\$ 42,415,615
31									
32	<u>LESS:</u>								
33	Contributions in Aid of Construction (CIAC)		\$ 14,991,871						\$ 14,991,871
34	Less: Accumulated Amortization		2,529,950						2,529,950
35	Net CIAC (L63 - L64)		12,461,921						12,461,921
36	Advances in Aid of Construction (AIAC)		4,008,916						4,008,916
37	Customer Meter Deposits		1,950						1,950
38	Deferred Income Taxes		1,271,696						1,271,696
39	FHSD Settlement		449,580						449,580
40	<u>ADD:</u>								
41	Working Capital Allowance		1,009,341					(142,739)	866,602
42	Deferred Debits		686,104				(607,898)		78,206
43	Original Cost Rate Base		\$ 27,269,321	\$ (0)	\$ (948,719)	\$ (403,606)	# \$ (607,898)	\$ (142,739)	\$ 25,166,361

Chaparral City Water Company
Docket No. W-02113A-13-0118
Test Year Ended December 31, 2012

Schedule GWB-5

RATE BASE ADJUSTMENT #1 RECLASSIFICATION

LINE NO.	ACCT NO.	Description	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENTS	[C] STAFF AS ADJUSTED
1	330	Reservoirs and Tanks	6,235,113	(6,235,113)	-
	330.1	Storage Tanks	-	6,235,113	6,235,113

References:

Column [A] : Amount reflected in Acct. 330, Reservoirs and Tanks

Column [B] , Col [C] less Col [A]

Column [C] , Per testimony GWB

RATE BASE ADJUSTMENT #2 POST TEST YEAR PLANT

LINE NO.	ACCT NO. & DESCRIPTION OF PROJECT	[A] ORIGINAL PROJECT ESTIMATES	[B] STAFF ADJUSTMENTS	[C] STAFF AS ADJUSTED
1	304500 Office & Ops Center	-	39,378	39,378
2	311000 Electrical Annual Program	130,000	-	(130,000)
3	307000 Well #10 Arsenic Treatment	793,374		(793,374)
4	320.1 Well #10 Arsenic Treatment	-	1,014,949	1,014,949
5	Subtotal (Net Inc.) to Acct. 320.1	793,374	1,014,949	221,575
5	320000 Shea WTP Filter Media	59,369	73,035	13,666
6	320000 Shea WTP Improvements	350,000	688	(349,312)
7	Total Adj to Acct 320.1	1,202,743	1,088,672	(114,071)
8	330000 Reservoir #2 Rehabilitation	595,860	692,236	96,376
9	330000 Lotus Reservoir 3	-	-	-
10	330000 Crestview Reservoir 7	-	-	-
11	330000 2013 Recurring Projects - Facilities	650,000	163,000	(487,000)
12	Total Adj to 330.1	1,245,860	855,236	(390,624)
13	331001 Distribution System	53,577	66,964	13,387
14	331001 Distribution Improvements	300,000	1,453	(298,547)
15	331001 Misc system improvements	-	212,350	212,350
16	331001 Main breaks	-	93,715	93,715
17	331001 Manholes replaced	-	-	-
18	331001 Valves new	-	4,633	4,633
19	331001 Valves replaced	-	144,905	144,905
20	331001 Mains scheduled	-	53,290	53,290
21	Total Adj to Acct 331.1	353,577	577,310	223,733
22	333000 Services Replaced	410,000	81,675	(328,325)
23	334100 Meters Replaced	300,000	28,274	(271,726)
24	335000 Hydrants Replaced	10,000	10,523	523
25	339600 Comprehensive Planning Study (Chloramination)	132,558	110,239	(22,319)
26	341100 Vehicles	9,248	9,637	389
27	343000 Tools & Equipment	31,777	36,935	5,158
28	343000 Tools & Equipment	-	42,993	42,993
29	Total Adj to Acct. 343	31,777	79,928	48,151
30	346000 ESRI Project (GIS)	-	-	-
31	346200 IPT Deployment	59,000	44,932	(14,068)
32	346200 Scada & Firewall	-	10,240	10,240
	Total Adj to Acct. 346	59,000	55,172	(3,828)
33	347000 Security	-	-	-
34	Comprehensive Planning Study (Well 11 Restoration)	-	-	-
35	Comprehensive Planning Study	-	-	-
36	Reservoir #2 Rehabilitation	-	-	-
37	Reservoir #2 Rehabilitation	-	-	-
38	Developer Funded	-	-	-
39	Totals	3,884,763	2,936,044	(948,719)

References:

Column [A] : Amount per Company application and response to Staff DR

Column [B] , Col [C] less Col [A]

Column [C] : Amount per Company response to Staff DR and Testimony GWB

RATE BASE ADJUSTMENT #3 UPIS AND ACCUMULATED DEPRECIATION

Line No.	Sub. Acct.	Description Company Application	Company Application E-5	Company Subtotal	Staff	Adjustment	Staff Calculated Accum Depreciations	Fully Depreciated
			Plant Balance 12/31/2012					
1	303100	Other Intangible Plant	\$ -	\$ -	\$ -	\$ -		\$ -
2	303600	Land and Land Rights	1,554,591	1,554,591	1,554,591	-	-	
3	304200	Structures and Improvements - P	190,044					
4	304300	Structures and Improvements - Ti	593,063					
5	304400	Structures and Improvements - T	169,971					
6	304500	Structures & Improvements - Ger	826,312	1,779,390	1,778,796	(594)	780,768	
7	305000	Collecting and Impounding Reser	1,019,211	1,019,211	1,007,411	(11,800)	457,368	
8	307000	Wells	159,628	159,628	159,627	(1)	108,329	
9	309000	Supply Mains	2,201,526	2,201,526	2,201,526	-	938,965	
10	311000	Pumping Equipment & Other Pun	5,926,668	5,926,668	5,976,046	49,378	4,868,619	3,365,052
11	320100	Water Treatment Equipment	6,551,094	6,551,094	6,558,040	6,946	1,513,186	
12	330000	Reservoirs and Tanks	4,989,253	4,989,253	4,991,920	2,667	1,636,582	
13	331001	Transmission and Distribution Ma	24,390,732	24,390,732	24,399,864	9,132	9,619,484	
14	333000	Services	10,890,767	10,890,767	10,907,517	16,750	2,532,141	
15	334100	Meters	2,916,068	2,916,068	2,919,624	3,556	2,374,387	
16	335000	Hydrants	2,019,913	2,019,913	2,030,960	11,047	387,168	
18	339100	Other Transmission & Distribution	143,521	143,521	184,742	41,221	39,879	
19	340100	Office Furniture and Equipment, i	305,068	305,068	305,067	(1)	392,898	264,394
20	341100	Transportation Equipment	494,662	494,662	417,313	(77,349)	415,605	400,233
21	343000	Power Operated Equipment & To	190,662	190,662	190,661	(1)	48,794	
22	345000	Power Operated Equipment	-	-	-	-	-	
23	346200	Communication Equipment	43,326	43,326	43,327	1	33,290	
24	347000	Other General Plant	41,221	41,221	-	(41,221)	-	
26	Total		<u>\$ 65,617,302</u>	<u>\$ 65,617,301</u>	<u>\$ 65,627,032</u>	<u>\$ 9,731</u>	<u>\$ 26,147,463</u>	<u>\$ 4,029,679</u>

See Note

Note: Some \$1 adjustments waived, plus rounding, net adjustment of \$9,733 on GWB-4

Chaparral City Water Company
Docket No. W-02113A-13-0118
Test Year Ended December 31, 2012

Schedule GWB-8

RATE BASE ADJUSTMENT #4 REVERSAL OF AFUDC AND DEFERRED DEPRECIATION DEFERRAL

LINE NO.	ACCT NO.	Description	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENTS	[C] STAFF AS ADJUSTED
1		Deferred Debits	607,898	(607,898)	-

References:

Column [A] : Amount reflected on Co Schedule B-2, as part of Deferred Debits

Column [B] , Col [C] less Col [A]

Column [C] , Per testimony GWB

RATE BASE ADJUSTMENT #5 CASH WORKING CAPITAL

Line No.	Description	Proforma Test Year Amount	Revenue Lag (Lead) Days	Expense Lag (Lead) Days	Net Lag (Lead) Days Col. C - Col. D	Lead/Lag Factor Col. E/365	Cash Working Capital Required Col. B * Col. F
	(A)	(B)	(C)	(D)	(E)	(F)	(G)
7	OPERATING EXPENSES						
8	Labor	\$ 1,024,112	34.93	13.09	21.84	0.05983271	\$ 61,275
9	Purchased Water	\$ 1,116,879	34.93	43.67	(8.74)	-0.0239481	(26,747)
10	Fuel & Power	\$ 585,139	34.93	27.86	7.07	0.01936695	11,332
11	Chemicals	\$ 115,182	34.93	(79.22)	114.15	0.31273681	36,022
12	Waste Disposal	\$ 7,113	34.93	41.90	(6.97)	-0.0190988	(136)
13	Intercompany Support Services	\$ 94,150	34.93	29.99	4.94	0.01353134	1,274
14	Corporate Allocation	\$ 410,813	34.93	30.00	4.93	0.01350394	5,548
15	Outside Services	\$ 508,106	34.93	88.00	(53.07)	-0.1454002	(73,879)
16	Group Insurance	\$ 178,067	34.93	12.00	22.93	0.06281901	11,186
17	Pensions	\$ 85,086	34.93	67.98	(33.05)	-0.0905509	(7,705)
18	Insurance Other Than Group	\$ 73,025	34.93	(26.14)	61.07	0.16731216	12,218
19	Customer Accounting	\$ 318,959	34.93	26.53	8.40	0.02301079	7,339
20	Rents	\$ 1,504	34.93		34.93	0.09569572	144
21	General Office Expense	\$ 164,179	34.93	39.69	(4.76)	-0.013044	(2,142)
22	Miscellaneous	\$ 158,553	34.93	(3.22)	38.15	0.10451764	16,572
23	Maintenance Expense	\$ 388,614	34.93	17.28	17.65	0.04835325	18,791
24	Intest Expense ¹	603,993	34.93	106.25	(71.32)	-0.1954002	(118,020)
25							
26	TAXES						
27	General Taxes-Property ¹	\$ 241,003	34.93	213.96	(179.0294)	(0.4905)	\$ (118,210)
28	General Taxes-Other	86,320	34.93	3.03	31.8989	0.0874	7,544
29	Income Tax ¹	874,456	34.93	37.00	(2.0711)	(0.0057)	(4,962)
30	TOTAL	<u>\$ 7,035,254</u>			CASH WORKING CAPITAL REQUIREMENT		<u>\$ (162,555)</u>

¹At proposed rates.

	Per Co	Per Staff	Adjustment
36 Cash Working Capital Requirement	\$ (19,817)	\$ (162,555)	\$ (142,739)
37 Required Bank Balances	780,673	780,673	-
38 Prepayments	248,484	248,484	-
39 Total Working Capital Allowance	1,009,341	866,602	(142,739)

OPERATING INCOME STATEMENT - TEST YEAR AND STAFF RECOMMENDED

LINE NO.	DESCRIPTION	[A] COMPANY TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF RECOMMENDED CHANGES	[E] STAFF RECOMMENDED
	Revenues	\$ -	\$ -	\$ -	\$ -	\$ -
1	Water Revenues	8,915,656	-	8,915,656	1,033,236	9,948,892
2	Other Revenues	99,329	-	99,329	-	99,329
3		-	-	-	-	-
4	Total Operating Revenues	<u>\$ 9,014,985</u>	<u>\$ -</u>	<u>\$ 9,014,985</u>	<u>\$ 1,033,236</u>	<u>\$ 10,048,220</u>
	Operating Expenses					
5	Labor	\$ 1,024,112	\$ -	\$ 1,024,112	\$ -	\$ 1,024,112
6	Purchased Water	1,065,953	50,926	1,116,879	-	1,116,879
7	Fuel & Power	605,885	(20,746)	585,139	-	585,139
8	Chemicals	119,266	(4,084)	115,182	-	115,182
9	Waste Disposal	7,113	-	7,113	-	7,113
10	Intercompany Support Services	94,150	-	94,150	-	94,150
11	Corporate Allocation	500,330	(89,517)	410,813	-	410,813
12	Outside Services	508,106	-	508,106	-	508,106
13	Group Insurance	178,067	-	178,067	-	178,067
14	Pensions	85,086	-	85,086	-	85,086
15	Regulatory Expense	91,668	-	91,668	-	91,668
16	Insurance Other Than Group	73,025	-	73,025	-	73,025
17	Customer Accounting	318,959	-	318,959	9,196	328,154
18	Rents	1,504	-	1,504	-	1,504
19	General Office Expense	164,179	-	164,179	-	164,179
20	Miscellaneous	158,553	-	158,553	-	158,553
21	Maintenance Expense	388,614	-	388,614	-	388,614
22	Depreciation & Amortization	2,014,048	(511,261)	1,502,787	-	1,502,787
23	General Taxes-Property	251,038	(18,828)	232,210	8,793	241,003
24	General Taxes-Other	86,320	-	86,320	-	86,320
25	Income Taxes	389,412	96,306	485,718	388,738	874,456
26	Total Operating Expenses	<u>\$ 8,125,389</u>	<u>\$ (497,204)</u>	<u>\$ 7,628,186</u>	<u>\$ 406,726</u>	<u>\$ 8,034,912</u>
27	Operating Income (Loss)	<u>\$ 889,596</u>	<u>\$ 497,204</u>	<u>\$ 1,386,800</u>	<u>\$ 626,509</u>	<u>\$ 2,013,309</u>

References:

Column (A): Company Schedule C-1
Column (B): Schedule GWB 11
Column (C): Column (A) + Column (B)
Column (D): Schedules GWB 2, Lines 29, 34 and 37
Column (E): Column (C) + Column (D)

SUMMARY OF OPERATING INCOME ADJUSTMENTS - TEST YEAR

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] Excess Water Loss ADJ #1 GWB-12	[C] Inc. Comp. ADJ #2 GWB-13	[D] Purchased Water Exp ADJ #3 GWB-14	[E] Deprec. Exp ADJ #5 GWB-16	[F] PROPERTY TAXES ADJ #5 GWB-18	[G] Income Taxes ADJ #6 GWB-17	[H] STAFF ADJUSTED
	Revenues								
1	Water Revenues	\$ 8,915,656	-	-	-	-	-	-	8,915,656
2	Other Revenues	99,329	-	-	-	-	-	-	99,329
3	Total Operating Revenues	\$ 9,014,985	\$ -	\$ -	\$ -	\$ -		\$ -	\$ 9,014,985
	Operating Expenses								
4	Labor	\$ 1,024,112					\$ -	\$ -	\$ 1,024,112
5	Purchased Water	1,065,953	(39,598)		90,524		-	-	1,116,879
6	Fuel & Power	605,885	(20,746)				-	-	585,139
7	Chemicals	119,266	(4,084)				-	-	115,182
8	Waste Disposal	7,113							7,113
9	Intercompany Support Services	94,150							94,150
10	Corporate Allocation	500,330		(89,517)					410,813
11	Outside Services	508,106							508,106
12	Group Insurance	178,067							178,067
13	Pensions	85,086							85,086
14	Regulatory Expense	91,668							91,668
15	Insurance Other Than Group	73,025							73,025
16	Customer Accounting	318,959							318,959
17	Rents	1,504							1,504
18	General Office Expense	164,179							164,179
19	Miscellaneous	158,553							158,553
20	Maintenance Expense	388,614							388,614
21	Depreciation & Amortization	2,014,048				(511,261)			1,502,787
22	General Taxes-Property	251,038					(18,828)		232,210
23	General Taxes-Other	86,320							86,320
24	Income Taxes	389,412						96,306	485,718
25	Total Operating Expenses	\$ 8,125,389	\$ (64,428)	\$ (89,517)	\$ 90,524	\$ (511,261)	\$ (18,828)	\$ 96,306	\$ 7,628,186
26	Operating Income	\$ 889,596	\$ 64,428	\$ 89,517	\$ (90,524)	\$ 511,261	\$ 18,828	\$ (96,306)	\$ 1,386,800

OPERATING INCOME ADJUSTMENT #1 - EXCESS WATER LOSS

LINE
NO.

1	One plus allowable water loss	110.00%
2	One plus actual water loss	113.90%
3	Allowable portion	96.58%
4	Disallowable portion	3.42%
5	Power Expense	605,885
6	Disallowance	\$ 20,746
7	Chemical Expense	119,266
8	Disallowance	\$ 4,084
9	Purchased Water Expense	1,156,477
10	Disallowance	\$ 39,598

Line 1: Maximum acceptable level of water losses

Line 2: Actual level of water losses

Line 3: Line 2 / line 3

Line 4: 1 minus line 4

Lines 5, and 7: Per Schedule GWB-11, Col [A]

Line 9 : Per Schedule GWB-11, Col [A] plus Col [D]

Line 6: Line 5 times line 4

Line 8: Line 7 times line 4

Line 10: Line 9 times line 4

Chaparral City Water Company
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Test Year Ended December 31, 2012

Schedule GWB-13

OPERATING INCOME ADJUSTMENT #2 - INCENTIVE COMPENSATION

LINE NO.	DESCRIPTION	[A] COMPANY	[B] STAFF	[C] STAFF
		PROPOSED	ADJUSTMENTS	RECOMMENDED*
1		\$ 89,517	\$ (89,517)	\$ -

References:

Column (A), Per Company Response to Staff data request

Column (B): Testimony GWB

Column (C): Column (A) + Column (B)

OPERATING INCOME ADJUSTMENT #3 - PURCHASED WATER EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED*
1		\$ 1,065,953	\$ 90,524	\$ 1,156,477

References:

Column (A), Company Workpapers

Column (B): Testimony GWB

Column (C): Column (A) + Column (B), Per Co Response
to Staff DR 4.4

OPERATING INCOME ADJUSTMENT #4 - DEPRECIATION EXPENSE

LINE NO.	ACCT. NO.	DESCRIPTION	[A] PLANT BALANCE	[B] FULLY DEPRECIATED	[C] DEPRECIABLE AMOUNT	[D] DEPRECIATION RATE	[E] DEPRECIATION EXPENSE
1		<u>PLANT IN SERVICE:</u>					
2	303	Other Intangible Plant	\$ 1,282,734		\$ 1,282,734	0.00%	-
3	303	Land and Land Rights	271,857		271,857	0.00%	-
4	304	Structures and Improvements - Pumping	190,044		190,044	3.33%	6,328
5	304	Structures and Improvements - Treatment	593,063		593,063	3.33%	19,749
6	304	Structures and Improvements - T & D	169,971		169,971	3.33%	5,660
7	304	Structures & Improvements - General	865,096		865,096	3.33%	28,808
8	305	Collecting and Impounding Reservoirs	1,002,159		1,002,159	2.50%	25,054
9	307	Wells	953,001		953,001	3.33%	31,735
10	309	Supply Mains	2,201,526		2,201,526	2.00%	44,031
11	311	Pumping Equipment & Other Pumping Plant	5,976,046	(3,365,052)	2,610,994	12.50%	326,374
12	320.1	Water Treatment Equipment	6,853,337		6,853,337	3.33%	228,216
13	330	Reservoirs and Tanks	-		-	0.00%	-
14	330.1	Storage Tanks	5,847,156		5,847,156	2.22%	129,807
15	331	Transmission and Distribution Mains	24,977,173		24,977,173	2.00%	499,543
16	333	Services	10,989,193		10,989,193	3.33%	365,940
17	334	Meters	2,947,898		2,947,898	8.33%	245,560
18	335	Hydrants	2,041,483		2,041,483	2.00%	40,830
19	339	Other Transmission & Distribution Plant	151,460		151,460	6.67%	10,102
20	339	Other Transmission & Distribution Plant	143,521		143,521	6.67%	9,573
21	340	Office Furniture and Equipment, Computers, Software, Peripherals	305,068	(264,394)	40,674	6.67%	2,713
22	341	Transportation Equipment	426,950	(400,233)	26,717	20.00%	5,343
23	343	Power Operated Equipment & Tool, Shop and Garage Equipment	270,590		270,590	5.00%	13,530
24	345	Power Operated Equipment	-		-	5.00%	-
25	346	Communication Equipment	98,498		98,498	10.00%	9,850
26	347	Other General Plant	0		0	10.00%	0
27		Company's reconciling Adjustment	5,253		5,253		-
28		Total Utility Plant in Service	68,563,078	(4,029,679)	64,533,399		2,048,746
29		Less: Non Depreciable Plant					
30		Other Intangible Plant			\$ 1,282,734		
31		Net Depreciable Plant and Depreciation Amounts			\$ 63,250,665		\$ 2,048,746
32							
33		Amortization of CIAC			\$ 14,991,871	3.2391%	\$ 485,600
34		Staff Recommended Depreciation Expense					\$ 1,563,146
35		Deferred CAP Amortization					\$ 15,641
36		Amortization of Gains on FHSD Settlement					\$ (76,000)
							\$ 1,502,787
37		Company Proposed Depreciation Expense					\$ 2,014,048
38		Staff Adjustment					\$ (511,261)

References:

Col [A] Schedule GWB-4
Col [B] Fully Depreciated Plant, per Testimony
Col [C] Col [A] less Col [B]
Col [D] Proposed Rates per Staff Engineering
Col [E] Col [A] times Col [B]

Chaparral City Water Company
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Schedule GWB-17

OPERATING INCOME ADJUSTMENT #5 - INCOME TAXES

<u>LINE NO.</u>	<u>DESCRIPTION</u>	<u>[A] COMPANY PROPOSED</u>	<u>[B] STAFF ADJUSTMENTS</u>	<u>[C] STAFF RECOMMENDED</u>
1	Income Taxes	<u>\$ 389,412</u>	<u>\$ 96,306</u>	<u>\$ 485,718</u>

References:

Column (A), Company Schedule C-2

Column (B): Testimony GWB

Column (C): Column (A) + Column (B),
see also Sch. GWB-2, line 48

OPERATING INCOME ADJUSTMENT #6 - PROPERTY TAX EXPENSE GRCF COMPONENT

LINE NO.	DESCRIPTION	[A] STAFF AS ADJUSTED	[B] STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues - 2011	\$ 9,014,985	\$ 9,014,985
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	18,029,971	18,029,971
4	Staff Adjusted Test Year Revenues - 2011	9,014,985	
5	Staff Recommended Revenue		10,048,221
6	Subtotal (Line 4 + Line 5)	27,044,956	28,078,192
7	Number of Years	3	3
8	Three Year Average (Line 5 / Line 6)	9,014,985	9,359,397
9	Department of Revenue Multiplier	2	2
10	Revenue Base Value (Line 7 * Line 8)	18,029,971	18,718,794
11	Plus: 10% of CWIP	161,294	161,294
12	Less: Net Book Value of Licensed Vehicles	-	-
13	Full Cash Value (Line 10 + Line 11 - Line 12)	18,191,265	18,880,088
14	Assessment Ratio	18.5%	18.5%
15	Assessment Value (Line 13 * Line 14)	3,365,384	3,492,816
16	Composite Property Tax Rate	6.9000%	6.9000%
17	Staff Test Year Adjusted Property Tax Expense (Line 15 * Line 16)	\$ 232,211	
18	Company Proposed Property Tax	\$ 251,038	
19	Staff Test Year Adjustment (Line 17 - Line 18)	\$ (18,828)	
20	Property Tax on Staff Recommended Revenue (Line 15 * Line 16)		\$ 241,004
21	Staff Test Year Adjusted Property Tax Expense (Line 17)		\$ 232,211
22	Increase in Property Tax Due to Increase in Revenue Requirement		\$ 8,793
23	Increase in Property Tax Due to Increase in Revenue Requirement (Line 22)		\$ 8,793
24	Increase in Revenue Requirement		\$ 1,033,236
25	Increase in Property Tax Per Dollar Increase in Revenue (Line 23 / Line 24)		0.85100%

REFERENCES:

Line 15: Composite Tax Rate, per Company
Line 18: Company Schedule C-1, Line 36

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP

Chairman

GARY PIERCE

Commissioner

BRENDA BURNS

Commissioner

BOB BURNS

Commissioner

SUSAN BITTER SMITH

Commissioner

IN THE MATTER OF THE APPLICATION)
OF CHAPARRAL CITY WATER COMPANY)
FOR A DETERMINATION OF THE CURRENT)
FAIR VALUE OF ITS UTILITY PLANT AND)
PROPERTY AND FOR AN INCREASE IN ITS)
RATES AND CHARGES BASED THEREON)

DOCKET NO. W-02113A-13-0118

DIRECT

TESTIMONY

OF

KATRIN STUKOV

UTILITIES ENGINEER

ARIZONA CORPORATION COMMISSION

UTILITIES DIVISION

DECEMBER 18, 2013

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PURPOSE OF TESTIMONY	2
ENGINEERING REPORT	2

EXHIBITS

Engineering Report	Exhibit KS
--------------------------	------------

INTRODUCTION

Q. Please state your name, place of employment and job title.

A. My name is Katrin Stukov. My place of employment is the Arizona Corporation Commission ("Commission"), Utilities Division ("Staff"), 1200 West Washington Street, Phoenix, Arizona 85007. My job title is Utilities Engineer.

Q. How long have you been employed by the Commission?

A. I have been employed by the Commission since June 2006.

Q. Please list your duties and responsibilities.

A. As a Utilities Engineer, specializing in water and wastewater engineering, I inspect and evaluate water and wastewater systems, obtain data, prepare reports, suggest corrective action, provide technical recommendations on water and wastewater system deficiencies, and provide written and oral testimony on rate and other cases before the Commission.

Q. How many cases have you analyzed for the Utilities Division?

A. I have analyzed over 80 cases covering various responsibilities for the Utilities Division.

Q. What is your educational background?

A. I graduated from the Moscow University of Civil Engineering with a Bachelor of Science degree in Civil Engineering with a concentration in water and wastewater systems.

Q. Briefly describe your pertinent work experience.

A. Prior to my employment with the Commission, I was a design review environmental engineer with the Arizona Department of Environmental Quality ("ADEQ") for twenty years. My responsibilities with ADEQ included review of projects for the construction of

1 water and wastewater facilities. Prior to that, I worked as a civil engineer in several
2 engineering and consulting firms, including Bechtel, Inc. and Brown & Root, Inc., in
3 Houston, Texas.
4

5 **PURPOSE OF TESTIMONY**

6 **Q. Were you assigned to provide the Staff's engineering analysis and recommendations**
7 **for this Chaparral City Water Company ("CCWC" or "Company") rate case**
8 **proceeding?**

9 A. Yes. I reviewed the Company's application and responses to data requests, and I visited
10 the water system. This testimony and its attachment present Staff's engineering
11 evaluation.
12

13 **ENGINEERING REPORT**

14 **Q. Please describe the attached Engineering Report, Exhibit KS.**

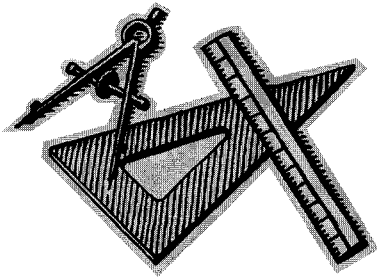
15 A. Exhibit KS presents CCWC's water system details and Staff's analysis and findings, and
16 is attached to this Direct Testimony. Exhibit KS contains the following major topics: (1) a
17 description and analysis of the water system, (2) water use, (3) growth, (4) compliance
18 with the rules of ADEQ and the Arizona Department of Water Resources ("ADWR"), (5)
19 depreciation rates, (6) Best Management Practices ("BMPs"), (7) System Improvement
20 Benefits Mechanism ("SIB") eligible projects and (8) Staff's conclusions and
21 recommendations.
22

23 **Q. Please summarize Staff's engineering conclusions and recommendations.**

24 A. Such a summary is provided at the front of Exhibit KS.
25

1 **Q. Does this conclude your Direct Testimony?**

2 **A. Yes, it does.**



Engineering Report For
Chaparral City Water Company
Docket No. W-02113A-13-0118 (Rates)
By Katrin Stukov
Utilities Engineer
September 25, 2013

SUMMARY

Conclusions

1. The Arizona Department of Environmental Quality ("ADEQ") or its formally delegated agent, the Maricopa County Environmental Services Department ("MCESD"), has reported that the Chaparral City Water Company's ("CCWC" or "Company") water system (PWS No. 07-017) is currently delivering water that meets water quality standards required by 40 C.F.R. 141 (National Primary Drinking Water Regulations) and Arizona Administrative Code, Title 18, Chapter 4.
2. Based on the Company's water use data for the test year, Arizona Corporation Commission ("ACC") Utilities Division Staff ("Staff") concludes that the Company's water system has adequate water supply and storage capacities to serve the present customer base and reasonable growth.
3. The Company's water system has a water loss of 13.9 percent. This percentage is above the recommended threshold amount of 10 percent.
4. The Company's water system is located in the Phoenix Active Management Area ("AMA").
5. The Arizona Department of Water Resources ("ADWR") has determined that the Company's water system is currently in compliance with ADWR requirements governing water providers and/or community water systems.
6. The Company has no outstanding ACC compliance issues.
7. The Company has an approved curtailment plan and backflow prevention tariffs on file with the ACC.

Recommendations

1. Staff recommends that the Company's reported annual water testing expense of \$21,754 be accepted for this proceeding.
2. Staff recommends the depreciation rates delineated in Table A.
3. Staff recommends the acceptance of the Company's requested service line and meter installation charges, as delineated in Table B.
4. Staff recommends approval of the Best Management Practices ("BMPs") listed in attachments A and B. Staff further recommends that the Company notify its customers, in a form acceptable to Staff, of the BMP tariffs authorized in this proceeding and their effective date by means of either an insert in the next regularly scheduled billing or by a separate mailing and provide copies of the BMP tariffs to any customer, upon request. The Company may request cost recovery of actual expenses associated with the BMPs implemented in its next general rate application.
5. Staff recommends that the Company ensure the accuracy of all meters in its water system (including meters indicating gallons purchased/pumped) and be required to report accurate information in its Water Use Data Sheet in future Annual Reports and other fillings.
6. Staff recommends that the Company continue to record and monitor monthly water losses, repair any leak as soon as it is discovered and implement a deteriorating infrastructure replacement plan as discussed in the Company's System Improvement Benefits Mechanism ("SIB") Eligibility Report and SIB Plant Table I.
7. Staff recommends approval of the Company's SIB Plant Table I eligible projects for purpose of SIB approval.
8. If the Commission approves a SIB, Staff recommends that the Company be required to file with Docket Control, as a compliance item in this docket, within 30 days, of the effective date of this Decision, a Plan of Administration ("POA") for the SIB mechanism, consistent with Attachment C for Staff review and approval.

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ATTACHMENTS

BMP Tariffs (BMPs 1.1, 2.2, 2.3, 3.1, 3.4, 3.6, 3.7, 4.1 and 5.2) Recommended by Staff	A
Meter Repair and/or Replacement Tariff (BMP 4.2) Recommended by Staff	B
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I. INTRODUCTION AND LOCATION OF COMPANY

On April 26, 2012, the Chaparral City Water Company ("CCWC" or "Company") filed a rate application with the Arizona Corporation Commission ("ACC" or "Commission").

The CCWC water system is located within the Town of Fountain Hills in Maricopa County and provides water service to approximately 13,600 customers.

The Company's certificated area covers approximately 19 square miles (approximately 12,120 acres). Figure 1 shows the location of CCWC within Maricopa County and Figures 2 delineate the Company's certificated area.

The Company plant facilities were visited on August 14, 2013, by Katrin Stukov, Commission Utilities Division Staff ("Staff") Engineer, accompanied by the Company's representatives, Jeffrey Stuck, Paul Cornejo, James Moore, Candace Coleman, Sheryl Hubbard, Sandy Murrey, Don Long and Travis Nuttall.

Figure 1

MARICOPA COUNTY

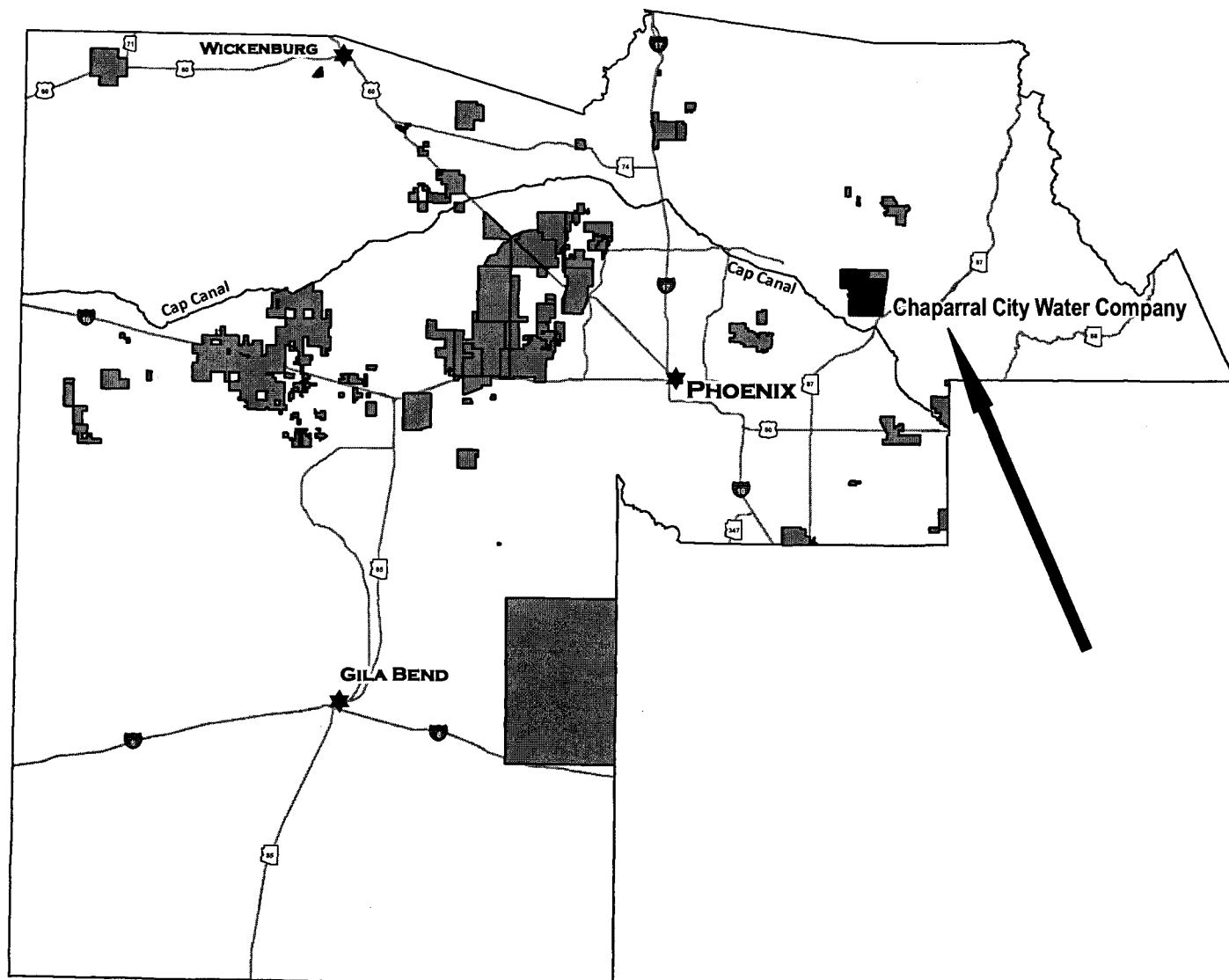
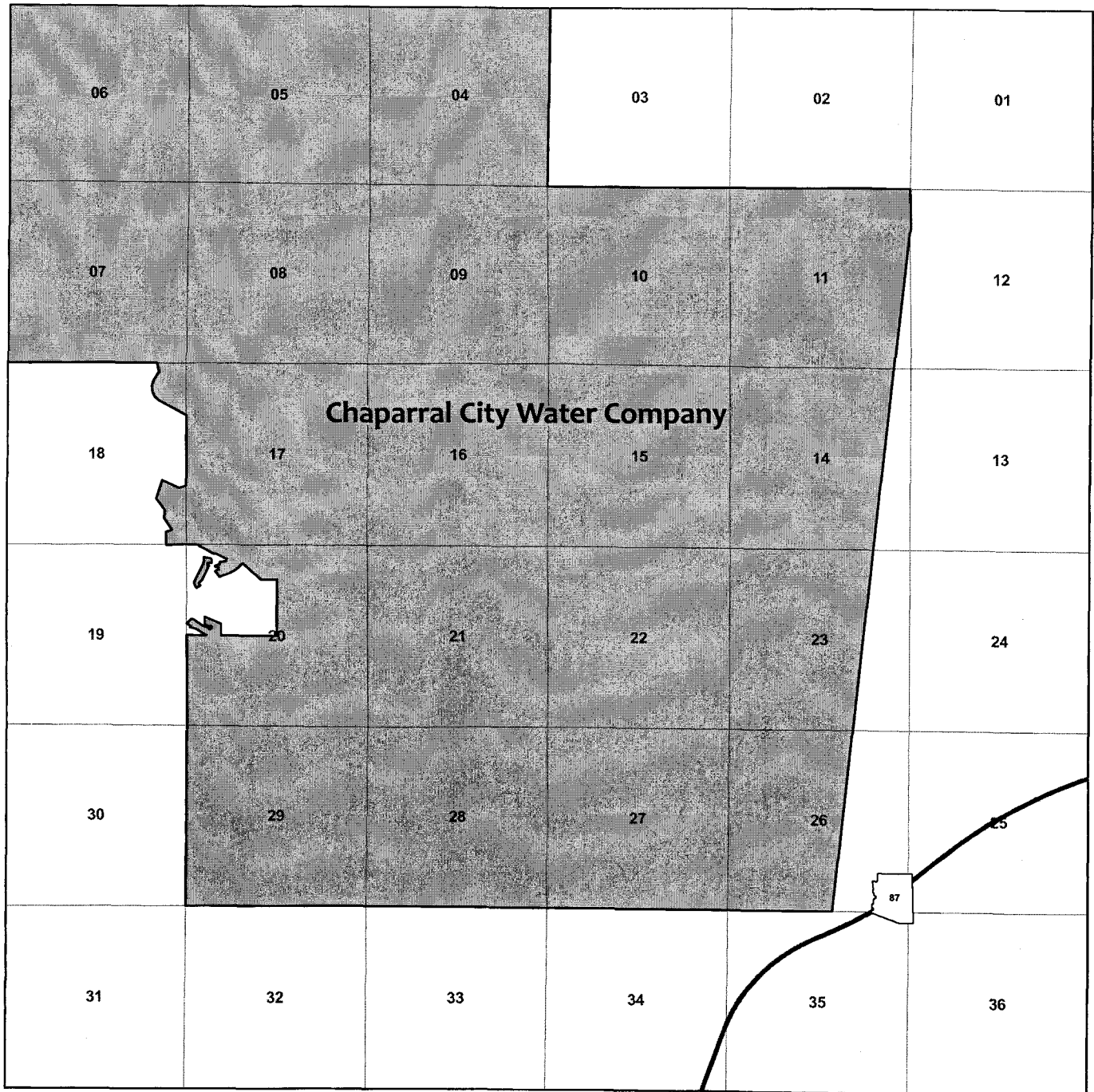


Figure 2

M A R I C O P A C O U N T Y



II. WATER SYSTEM

1. Description of the Water System

The CCWC water system relies on two sources of water supply. The primary source is the surface water from the Central Arizona Project ("CAP") canal.¹ The CAP water is transported via a pump station and a five mile transmission line to a 3.5 million gallon raw water storage tank at the Shea Water Treatment Plant ("SWTP"), which has a treatment capacity of 15 million gallons per day ("MGD").

The second source is the groundwater from the Company's Well No.10. According to the Company, Well No.10 has arsenic concentration up to 15 parts per billion ("ppb") and exceeds the Environmental Protection Agency's ("EPA") arsenic standard of 10 ppb. Consequently, in April 2013, the Company installed an arsenic removal system ("ARS") for this well.

The current operation of the water system consists of one CAP intake pump station, one transmission line, one raw water storage tank, one surface water treatment plant, one well, one ARS, eight potable water storage tanks, seven potable water pump stations and a distribution system, with four pressure zones. A system schematic is shown in Figure B-1 with detailed plant facility descriptions as follows:

CAP Intake Pump Station

Booster Pumps		Surge Tank		Location
Capacity (HP)	Quantity	Capacity (HP)	Quantity	
450	4 ²	5,000	1	124 th St. & Shea

SWTP

Capacity (MGD)	Configuration/Process	Components	Date Placed in Service
15	Three-5MGD modules utilizing contact clarification-filtration treatment process	3.5 million gallons raw water storage tank, chemical injection system, adsorption clarifiers, sand filters, disinfection system, backwash system (with two 175 HP backwash pumps), finished water pump station (with two 200 HP pumps and two 75 HP pumps)	1998-First module 2005-Last module

¹ According to the Company, CAP water is purchased under a subcontract with the Central Arizona Water Conservation District ("CAWCD"), which operates the CAP.

² At the time of the Staff site visit, one booster pump was temporary out of service due to a pump and motor maintenance/ replacement.

Meters
(Surface Water Facilities)

ID No.	Description / Location	Size (inches)
1 ³	CAWCD raw water meter at CAP intake	24
2 ⁴	CCWC raw water meter at SWTP	2
3	Backwash water meter at SWTP	10
4	Treated water meter at SWTP	18
5	Treated water meter at SWTP	12

Well Data

Company Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Meter ID	Year Drilled
No.10	55-604786	350	1,700	735	20/16	10	No.6	1971
No.11	55-604787 (not in-service)	n/a	n/a	750	20/16	n/a	n/a	1972
No.8	55-604784 (not in-service)	n/a	n/a	725	11	n/a	n/a	1967
No.9	55-604785 (not in-service)	n/a	n/a	750	20/16	n/a	n/a	1970

Arsenic Removal System
(Treatment/Bypass/Blend)

Treatment Flow Rate (GPM)	Configuration/Process	Manufacturer	Date Placed in Service (AOC)	Location	Meter No.7 Size (inches)
850 ⁵	Two treatment vessels, parallel operation, utilizing adsorption process	Severn Trent	April 5, 2013	Well No.10	8

³ Per Company's response number KS 2.2 (a), calibration of the CAWCD meter #1 was corrected on September 13, 2012.

⁴ Per Company's response number KS 2.3, the CCWC meter #2 was not functional during the test year. This meter was replaced in May 2013.

⁵ The ARS operation involves treating of 850 GPM (one-half) of the water produced by Well No.10 and blending it with 850 GPM of untreated Well No.10 water

Potable Water Storage Tanks and Pump Stations

Storage Tanks		Pump Stations				Location	ID No.
		Pressure Tanks		Booster Pumps			
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity		
500,000	1			40 60 120	1 1 1	Blackbird	1
1,500,000	1 ⁶	10,000	1	75 100	1 1	Fountain Hills	2
1,300,000	1	5,000	1	40 60	1 1	Lotus	3
500,000	1			125	2	Golden Eagle	4
1,200,000	1	1,500 5,000	1 1	20 75 125	1 2 2	Mayan	5
1,200,000	1					Eagle Ridge	6
1,200,000	1	5,000	1	75 40	2 2	Crestview	7
500,000	1					Eagle Nest	8
				40 75	1 2	Copper wynd	8
Total: 7,400,000	8		5		21 booster pumps / 7 pump stations		

⁶ Per Company's response number KS 2.6, the storage tank No.2 was taken out of service for rehabilitation on October 29, 2012 and was placed back in-service on April 10, 2013.

Water Mains

Size (inches)	Material	Length (feet)
4	C900, AC, DIP	40,712
6	C900, AC, DIP	477,666
8	C900, AC, DIP	316,617
10	C900, AC, DIP	2,169
12	C900, AC, DIP	207,235
16	C900, AC, DIP	33,789
24	C900, AC, DIP	4,474
Total:		1,082,662

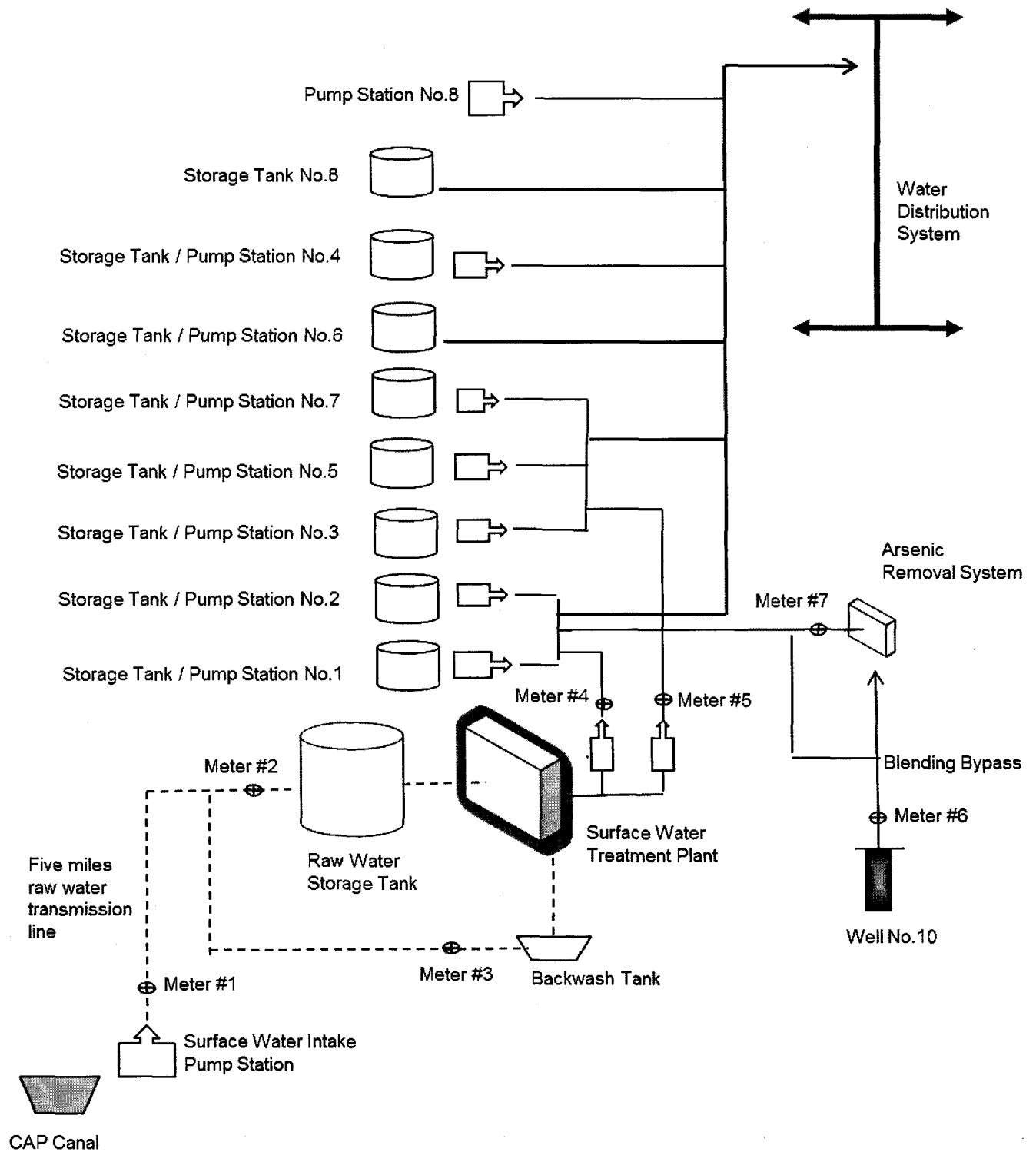
Customer Meters

Size (inches)	Quantity
3/4	8,625
1	4,695
1-1/2	175
2	153
3	67
4	10
6	5
Total:	13,730

Fire Hydrants

Size	Quantity
Standard	1,741

Figure 3 Water System Schematic

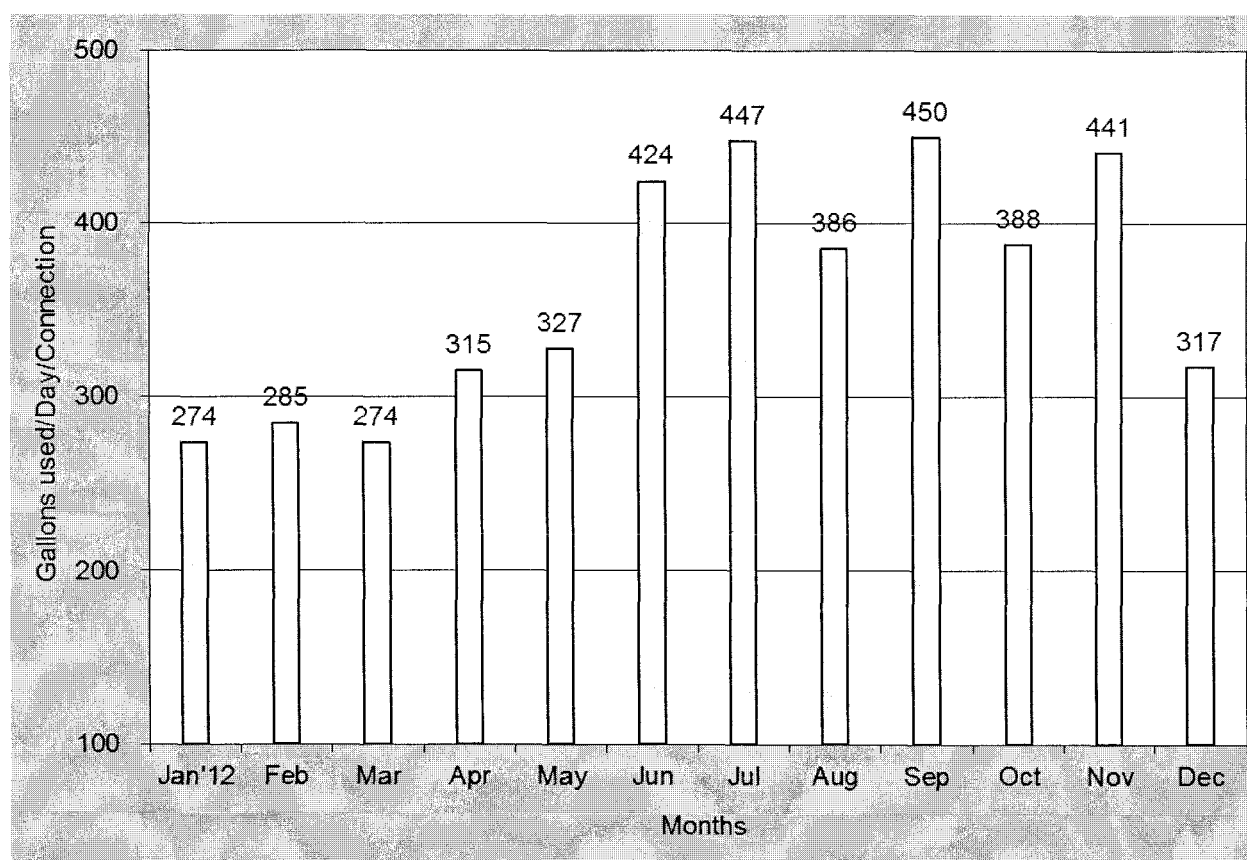


2. Water Use

Water Sold

Figure 4 represents the water consumption data provided by the Company in its revised water use data sheet⁷ for the test year ending December 31, 2012. The Company customer consumption included a high monthly water use of 450 gallons per day (“GPD”) per connection in September, and the low water use was 274 GPD per connection in January and March. The average annual use was 361 GPD per connection.

Figure 4 Water Use



Non-account Water

Non-account water should be 10 percent or less, and never more than 15 percent. It is important to be able to reconcile the difference between water sold and the water produced by the source. A water balance will allow a company to identify water and revenue losses due to leakage, theft and flushing.

⁷ Per Company's response number KS 2.2

The Company reported 2,133,717,000⁸ gallons purchased/pumped, 1,786,417,000 gallons sold and 49,833,000 gallons of beneficial non-revenue uses⁹, resulting in a water loss of 13.9 percent. This percentage is above the recommended threshold amount of 10 percent.

Staff recommends that the Company ensure the accuracy of all meters in its water system (including meters indicating gallons purchased/pumped) and be required to report accurate information in its Water Use Data Sheet in future Annual Reports and other filings.

Staff recommends that the Company continue to record and monitor monthly water losses, repair any leak as soon as it is discovered and implement a deteriorating infrastructure replacement plan as discussed in Section VIII in this report and System Improvement Benefits Mechanism (“SIB”) Plant Table I.

3. System Analysis

Based on the Company’s water use data for the test year, Staff concludes that the water system’s current source capacity totaling approximately 12,000 GPM and potable water storage capacity totaling 7,400,000 gallons is adequate to serve the present customer base and reasonable growth.

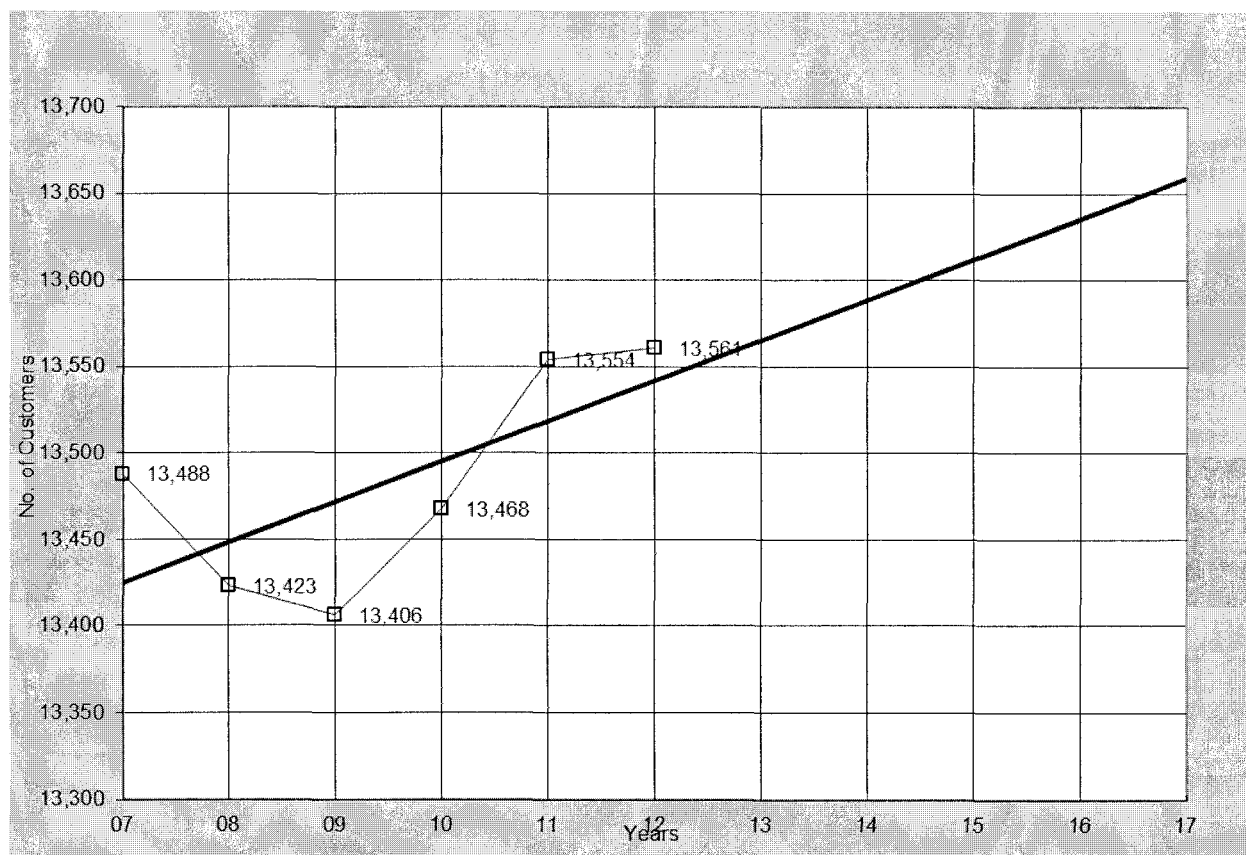
4. Growth

Based on customer data obtained from the Company’s Annual Reports, it is projected that the Company’s system could have over 13,650 connections by 2017. Figure 5 depicts actual growth from 2007 to 2012 and projects an estimated growth in the service area for the next five years using linear regression analysis. However, even though the regression analysis indicates minimum growth by 2017, actual growth could be much more if the economy improves.

⁸ Per Company’s response number KS 2.1, the reported amount of Gallons Purchased from CAP was adjusted for 4.3% CAP meter #1 error.

⁹ Per Company’s response number KS 2.4, for the test year, the system’s beneficial non-revenue water use included in-plant usage and flushing of water mains.

Figure 5



III. ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (“ADEQ”) COMPLIANCE

Compliance

ADEQ or its formally delegated agent, the MCESD, has reported that the Company’s water system (PWS No. 07-017) is currently delivering water that meets water quality standards required by 40 C.F.R. 141 (National Primary Drinking Water Regulations) and Arizona Administrative Code, Title 18, Chapter 4.¹⁰

Water Testing Expense

The Company reported its water testing expenses for the test year in the “Miscellaneous” operating expenses account. The Company reported its adjusted water testing expenses for the test year at \$21,754.¹¹

¹⁰ Per MCESD Compliance Status Reports dated February 7, 2013.

¹¹ Per Company’s Schedule C-2 and e-mail dated May 8, 2013.

Staff reviewed the Company's water testing expenses and recommends that the reported annual water testing expense of \$21,754 be accepted for this proceeding.

IV. ARIZONA DEPARTMENT OF WATER RESOURCES ("ADWR") COMPLIANCE

The Company's water system is located in the Phoenix AMA.

The ADWR has determined that the CCWC's water system is currently in compliance with ADWR requirements governing water providers and/or community water systems.¹²

V. ACC COMPLIANCE

A check with Utilities Division Compliance Section showed that there are currently no delinquent compliance items for the Company.¹³

VI. DEPRECIATION RATES

Staff has developed typical and customary depreciation rates within a range of anticipated equipment life. These rates are presented in Table A. Staff recommends that the Company adopt Staff's typical and customary depreciation rates in the accounts listed in Table A.

¹² Per ADWR Compliance status check dated May 23, 2013.

¹³ Per ACC Compliance status check dated May 29, 2013.

TABLE A
DEPRECIATION RATE TABLE FOR WATER COMPANIES

NARUC Account No.	Depreciable Plant	Average Service Life (Years)	Annual Accrual Rate (%)
304	Structures & Improvements	30	3.33
305	Collecting & Impounding Reservoirs	40	2.50
306	Lake, River, Canal Intakes	40	2.50
307	Wells & Springs	30	3.33
308	Infiltration Galleries	15	6.67
309	Raw Water Supply Mains	50	2.00
310	Power Generation Equipment	20	5.00
311	Pumping Equipment	8	12.5
320	Water Treatment Equipment		
320.1	Water Treatment Plants	30	3.33
320.2	Solution Chemical Feeders	5	20.0
330	Distribution Reservoirs & Standpipes		
330.1	Storage Tanks	45	2.22
330.2	Pressure Tanks	20	5.00
331	Transmission & Distribution Mains	50	2.00
333	Services	30	3.33
334	Meters	12	8.33
335	Hydrants	50	2.00
336	Backflow Prevention Devices	15	6.67
339	Other Plant & Misc Equipment	15	6.67
340	Office Furniture & Equipment	15	6.67
340.1	Computers & Software	5	20.00
341	Transportation Equipment	5	20.00
342	Stores Equipment	25	4.00
343	Tools, Shop & Garage Equipment	20	5.00
344	Laboratory Equipment	10	10.00
345	Power Operated Equipment	20	5.00
346	Communication Equipment	10	10.00
347	Miscellaneous Equipment	10	10.00
348	Other Tangible Plant	----	----

NOTES:

1. These depreciation rates represent average expected rates. Water companies may experience different rates due to variations in construction, environment, or the physical and chemical characteristics of the water.
2. Account 348, Other Tangible Plant may vary from 5% to 50%. The depreciation rate would be set in accordance with the specific capital items in this account.

VII. OTHER ISSUES

1. Service Line and Meter Installation Charges

The Company has requested changes in its service line and meter installation charges. Service line and meter installation charges are refundable advances. The Company has requested to reduce its current charges for smaller meters to reflect meter installation cost in the proposed SIB Plant Table I. For services and meters 2 inches and larger, the Company is requesting to charge these installation charges "at cost".

Staff recommends acceptance of the Company's requested installation charges as shown in Table B.

Table B
Service Line and Meter Installation Charges

Company's Current Charges				Company's Requested Charges		
Meter Size	Service Line Charges	Meter Charges	Total Charges	Service Line Charges	Meter Charges	Total Charges
5/8x 3/4- inch	\$385	\$135	\$520	\$385	\$135	\$520
3/4- inch	\$385	\$215	\$600	\$385	\$195	\$580
1- inch	\$435	\$235	\$690	\$435	\$234	\$669
1 1/2- inch	\$470	\$465	\$935	\$470	\$367	\$837
2- inch Turbine	\$630	\$965	\$1,595	At Cost	At Cost	At Cost
2- inch Compound	\$630	\$1,690	\$2,320			
3- inch Turbine	\$805	\$1,470	\$2,275	At Cost	At Cost	At Cost
3- inch Compound	\$845	\$2,265	\$3,110			
4- inch Turbine	\$1,170	\$2,350	\$3,520	At Cost	At Cost	At Cost
4- inch Compound	\$1,230	\$3,245	\$4,475			
6- inch Turbine	\$1,730	\$4,545	\$6,275	At Cost	At Cost	At Cost
6- inch Compound	\$1,770	\$6,280	\$8,050			
8- inch or Larger	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost

2. Curtailment Plan Tariff

The Company has an approved curtailment plan tariff on file with the ACC.

3. Backflow Prevention Tariff

The Company has an approved backflow prevention tariff on file with the ACC.

4. *BMPs*

EPCOR, the parent company of CCWC, has Commission-approved BMP tariffs in place in some of its other districts. The Company selected the following nine BMP's for implementation in its Chaparral system:

- Local and / or Regional Messaging Program Tariff - BMP 1.1
- Youth Conservation Educational Program Tariff - BMP 2.2
- New Homeowner Landscape Information Tariff – BMP 2.3
- Residential Audit Program Tariff – BMP 3.1
- Residential Interior Retrofit Tariff – BMP 3.4
- Customer High Water Use Inquiry Resolution Tariff – BMP 3.6
- Customer High Water Use Notification Tariff – BMP 3.7
- Leak Detection Program Tariff – BMP 4.1
- Water System Tampering Tariff – BMP 5.2

Staff recommends approval of the BMPs listed above for the Chaparral system. The tariffs recommended by Staff are labeled as Attachment A.

In addition to the above BMPs, CCWC filed its proposed Meter Repair and/or Replacement Tariff (BMP 4.2) in order to qualify for a meter replacements and improvements under SIB.¹⁴ This BMP tariff was based on the template developed by Staff. The tariff that Staff and the Company reached agreement on generally conforms to the template developed by Staff. Therefore, Staff recommends approval of the Company's proposed Meter Repair and/or Replacement Tariff (BMP 4.2) in the form on which Staff and the Company reached agreement. The tariff recommended by Staff is labeled as Attachment B.

Staff further recommends that the Company notify its customers, in a form acceptable to Staff, of the BMP tariffs authorized in this proceeding and their effective date by means of either an insert in the next regularly scheduled billing or by a separate mailing and shall provide copies of the BMP tariffs to any customer, upon request. The Company may request cost recovery of actual expenses associated with the BMPs implemented in its next general rate application.

VIII. SIB

The Company is seeking a SIB to address distribution system infrastructure replacements and improvements to service existing customers. As a supplement to its application, the Company submitted a SIB Eligibility Report ("Report")¹⁵ supporting the need for the proposed 5-year infrastructure replacements and improvements. The Report identifies the most critical areas, estimates the quantity of service lines, meters, hydrants and valves that need to be replaced, and

¹⁴ See Section VIII below.

¹⁵ Exhibit CC-1, dated August 7, 2013(docketed on August 22, 2013)

estimates the associated replacement costs. In addition, the Report included a revised SIB Plant Table I¹⁶ of planned SIB- eligible projects and related costs and an example of SIB Plant Table II.¹⁷

A summary of the Company's proposed 5-year infrastructure replacement plan is tabulated below:

Year	2014		2015		2016		2017		2018		5-Year Total	
Plant	units	cost	units	cost	units	cost	units	cost	nits	cost	units	cost
Services	247	\$958,558	221	\$857,656	256	\$993,485	260	\$1,009,008	231	\$896,465	1,216	\$4,715,172
Meters	1,507	\$314,989	1,357	\$317,509	1,327	\$277,493	1,588	\$328,953	1,418	\$306,835	7,197	\$1,545,779
Hydrants	41	\$92,726	35	\$79,157	37	\$83,680	37	\$83,679	36	\$81,418	186	\$420,660
Valves	95	\$453,491	103	\$495,043	88	\$436,776	74	\$353,676	89	\$430,795	449	\$2,169,781
Total		\$1,819,764		\$1,749,365		\$1,791,436		\$1,775,316		\$1,715,513		\$8,851,392

Staff has reviewed the Company's Report and the proposed 5-year infrastructure replacement plan at a cost of \$8,851,392 and found the proposal reasonable and appropriate. However, no "used and useful" determination of the proposed plant items was made, and no conclusions should be inferred for rate making or rate base purposes in the future.

If the Commission approves a SIB, Staff recommends that the Company be required to file with Docket Control, as a compliance item in this docket, within 30 days, of the effective date of this Decision, a Plan of Administration ("POA") for the SIB mechanism, consistent with Attachment C for Staff review and approval.

¹⁶ Exhibit CC-2, dated August 21, 2013 (docketed on August 22, 2013)

¹⁷ Exhibit CC-3, dated December 6, 2013 (docketed on December 6, 2013)

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

Local and/or Regional Messaging Program Tariff – BMP 1.1**PURPOSE**

A program for the Company to actively participate in a water conservation campaign with local or regional advertizing (Modified Non-Per Capita Conservation Program BMP Category 1: Public Awareness/Public Relations 1.1: Local and/or Regional Messaging Program).

REQUIREMENTS

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. The Company or designated representative shall actively participate in water conservation campaign with local and/or regional advertising.
2. The campaign shall promote ways for customers to save water.
3. The Company shall facilitate the campaign through one or more of the following avenues (not an all inclusive list):
 - a. Television commercials
 - b. Radio commercials
 - c. Websites
 - d. Promotional materials
 - e. Vehicle signs
 - f. Bookmarks
 - g. Magnets
4. The Company shall keep a record of the following information and make it available to the Commission upon request:
 - a. A description of the messaging program implemented and program dates.
 - b. The number of customers reached (or an estimate).
 - c. Costs of Program implementation.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

Youth Conservation Education Program Tariff – BMP 2.2

PURPOSE

A program for the Company to promote water conservation by increasing students' understanding of water resources and the need to conserve (Modified Non-Per Capita Conservation Program BMP Category 2: Conservation Education and Training 2.2: Youth Conservation Education Program).

REQUIREMENTS

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. The Company or designated representative shall work with schools in its service area to increase students' understanding of water resources and to promote water conservation.
2. The Company shall provide a combination of instructional assistance, education materials, teacher education, classroom presentations, and field trips to water related facilities.
3. The Company shall provide the following teacher resources.
 - a. Offer Project WET (Water Education for Teachers) workshops to teachers twice yearly. In lieu of Project WET the Company may market its Water Conservation Assembly Program to all schools within its service area. The Water Conservation Assembly Program will focus on teaching students about water resources and water conservation. The assembly itself will be an interactive water conservation discussion.
 - b. Provide free resource materials and information upon request.
 - c. Provide in-classroom presentations upon request.
4. The Company shall make available free take home educational materials for elementary school students.
5. The Company shall keep a record of the following information and make it available upon request.
 - a. A description of the youth conservation education process implemented.
 - b. The number of students reached (or an estimate).
 - c. A description of the written water conservation material provided free to students.
 - d. Costs of the Youth Conservation Education Program implementation.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

New Homeowner Landscape Information Tariff – BMP 2.3

PURPOSE

A program for the Company to promote the conservation of water by providing a landscape information package for the purpose of educating its new customers about low water use landscaping (Modified Non-Per Capita Conservation Program BMP Category 2: Conservation Education and Training 2.3: New Homeowner Landscape Information).

REQUIREMENTS:

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. Upon establishment of water service the Company shall offer and make available upon request a free "Homeowner Landscape Packet" to each new customer in the Company's service area. The packet will include at a minimum: a cover letter describing the water conservation expectations for all customers in the Company's service area, applicable rate tariffs, a basic interior/exterior water saving pamphlet, xeriscape landscape information, a list of low water use trees, plants, shrubs, etc., watering guidelines, and a rain water harvesting pamphlet.
2. Upon customer request, the Company shall provide:
 - a. On-site consultations on low water use landscaping and efficient watering practices.
 - b. A summary of water saving options.
3. The Company shall keep a record of the number of packets provided to new customers and make it available to the Commission upon request.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

Residential Audit Program Tariff – BMP 3.1

PURPOSE

A program for the Company to promote water conservation by providing customers with information on performing water audits to determine conservation opportunities at their residence (Modified Non-Per Capita Conservation Program BMP Category 3: Outreach Services 3.1: Residential Audit Program).

REQUIREMENTS

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. The Company shall offer self-audit information.
2. The Company or designated representative shall provide all customers that request them with a self-audit kit.
3. The kit shall include detailed instructions and tools for completing the water audit including information on how to check their water meter. The audit kit shall include but not be limited to information on checking the following components: irrigation system, pool, water features, toilets, faucets and shower.
4. If requested, the Company shall assist the customer in a self-water audit and assist the customer in determining what might be causing high water usage as well as supply customer with information regarding water conservation and landscape watering guidelines. As part of the water audit, and if requested to do so by the customer, the Company shall confirm the accuracy of the customer meter (applicable meter testing fees shall apply).
5. The Company shall keep a record of the following information and make it available to the Commission upon request:
 - a. A description of the water conservation material provided in the kit.
 - b. The number of kits provided to customers.
 - c. Implementation costs of the Residential Audit Program.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

Residential Interior Retrofit Program Tariff – BMP 3.4

PURPOSE

A program for the Company to promote water conservation by providing residential customers free or low cost plumbing fixtures for their residence (Modified Non-Per Capita Conservation Program BMP Category 3: Outreach Services 3.4: Residential Interior Retrofit Program).

REQUIREMENTS

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. The Company or designated representative shall provide to residential customers that request them that live in homes built prior to the adoption of the 1990 Uniform Plumbing Code free or low cost low water use fixtures such as faucets, faucet aerators, low flow shower heads, toilets and toilet dams. The Company must offer the fixtures/fixture retrofits to all residential customers meeting the above criteria unless the Company can demonstrate that targeting certain portions of its water service area is likely to yield the highest participation and/or potential water savings.
2. The fixtures or retrofit kit shall include detailed instructions for installing the retrofit fixtures.
3. The Company shall select appropriate communications channels to advertize the program.
4. The Company shall keep a record of the following information and make it available to the Commission upon request:
 - a. A description of the Residential Interior Retrofit Program including a description of the fixtures provided to customers and estimated water savings as a result of Program implementation.
 - b. The number of retrofit fixtures requested by customers and the number of fixtures provided.
 - c. Costs of the Residential Interior Retrofit Program.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

Customer High Water Use Inquiry Resolution Tariff – BMP 3.6

PURPOSE

A program for the Company to assist its customers with their high water-use inquiries and complaints (Modified Non-Per Capita Conservation Program BMP Category 3: Outreach Services 3.6: Customer High Water Use Inquiry Resolution).

REQUIREMENTS

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. The Company shall handle high water use inquiries as calls are received.
2. Calls shall be taken by a customer service representative who has been trained on typical causes of high water consumption as well as leak detection procedures that customers can perform themselves.
3. Upon request by the customer or when the Company determines it is warranted, a trained Field Technician shall be sent to the customer's residence to verify consumption and conduct a leak detection inspection and further assist the customer with water conservation measures.
4. The Company shall follow up on every customer inquiry or complaint and keep a record of inquiries and follow-up activities. The Company shall make this information available to the Commission upon request.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

Customer High Water Use Notification Tariff – BMP 3.7

PURPOSE

A program for the Company to monitor and notify customers when water use seems to be abnormally high and provide information that could benefit those customers and promote water conservation (Modified Non-Per Capita Conservation Program BMP Category 3: Outreach Services Program 3.7: Customer High Water Use Notification).

REQUIREMENTS

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. The Company shall track water usage for each customer and notify the customer if water use seems excessive for that particular billing for that time of the year.
2. The Company shall identify customers with high consumption, verify the high consumption, and investigate each instance to determine the possible cause.
3. The Company shall contact the high water use customers via telephone, email, by mail or in person. The Company shall contact the customer as soon as practical in order to minimize the possible loss of water. The customer will not be required to do anything to receive this notification.
4. In the notification the Company shall explain some of the most common water usage problems and common solutions and points of contact for dealing with the issues.
5. In the notification, the customer will be reminded of possible high water consumption occurrences, such as:
 - a. Leaks, running toilets, or valves or flappers that need to be replaced.
 - b. Irrigation system valves or sprinkler heads which may be leaking.
 - c. Sprinklers that may be watering the house, sidewalk, or street, etc. increasing irrigation requirements.
 - d. Leaking pool or spas and possible leaks around pumps.
 - e. More people in the home than usual taking baths and showers.
 - f. Doing more loads of laundry than usual.
 - g. Doing a landscape project or starting a new lawn.
 - h. Washing vehicles more often than usual.
6. The Company shall offer water conservation information that could benefit the customer, such as, but not limited to, audit programs, publications, and rebate programs.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

7. The Company shall assist the customer in determining what might be causing the high water usage as well as offer the customer information regarding water conservation and landscape watering guidelines. The Company shall confirm the accuracy of the customer meter if requested to do so by the customer (applicable meter testing fees shall apply).
8. The type of notification, the timing of the notification (i.e., how long after high water use was discovered by the Company), and the criteria used for determining which customers are notified shall be recorded. The Company shall make this information available to the Commission upon request.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

Leak Detection Program Tariff – BMP 4.1

PURPOSE

A program for the Company to systematically evaluate its water distribution system to identify and repair leaks (Modified Non-Per Capita Conservation Program Best Management Practice Category 4: Physical System Evaluation and Improvement 4.1 Leak Detection Program).

REQUIREMENTS

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

On a systematic basis, the Company shall perform leak detection inspections of its distribution system to identify and fix leaks.

This program shall be implemented through a strategy of targeting certain portions of the water service area which will yield the highest potential for water savings first.

1. The Company shall implement a comprehensive leak detection and repair program to attain and maintain a goal of less than 10 percent unaccounted for water loss in its system(s). The program must include auditing procedures, in-field leak detection and repair efforts. The Company shall take whatever practical steps are necessary to ensure that its water system is operating at optimal efficiency.
2. On a systematic basis, at least every two years (annually for smaller systems), the Company shall visually inspect its above ground water distribution system (to include hydrants, valves, tanks, pumps, etc. in the distribution system) to identify and repair leaks. Detection shall be followed by repair or in some cases replacement. Repair vs. replacement will depend upon site-specific leakage rates and costs.
3. Leak Detection efforts should focus on the portion of the distribution system with the greatest expected problems, including:
 - a. areas with a history of excessive leak and break rates;
 - b. areas where leaks and breaks can result in the heaviest property damage;
 - c. areas where system pressure is high;
 - d. areas exposed to stray current and traffic vibration;
 - e. areas near stream crossings; and,
 - f. areas where loads on pipe may exceed design loads.
4. The Company shall keep accurate and detailed records concerning its leak detection and repair/rehabilitation program and the associated costs. Records of repairs shall include: possible causes of leak; estimated amount of water lost; and date of repair. These records shall be made available to the Commission upon request.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

5. The Company shall maintain a complete set of updated distribution system maps.
6. The Company shall conduct a water audit annually which includes the following steps to determine how efficient each water system is operating and where the losses might be.
 - a. Use coordinated monthly source and service meter readings to calculate how much water enters and leaves the system during the 12 month review period.
 - b. Track and estimate any unmetered authorized uses.
 - c. Calculate the total amount of leakage using the following formula:
$$\text{Unaccounted for water (\%)} = [(\text{Production and/or purchased water minus metered use \& estimated authorized un-metered use}) / (\text{Production and/or purchased water})] \times 100\%$$
 - d. Authorized un-metered uses may include firefighting, main flushing, process water for water treatment plants, etc. Water losses include all water that is not identified as authorized metered water use or authorized un-metered use.
 - e. Determine possible reasons for leakage, including physical leaks and unauthorized uses.
 - f. Analyze results to determine the improvements needed, such as, better accounting practices, leak survey or replacing old distribution pipes.
7. The Company shall keep accurate and detailed records concerning its annual water audit results. These records shall be made available to the Commission upon request.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

WATER SYSTEM TAMPERING TARIFF – BMP 5.2

PURPOSE

The purpose of this tariff is to promote the conservation of groundwater by enabling the Company to bring an action for damages or to enjoin any activity against a person who tampers with the water system.

REQUIREMENTS:

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission, specifically Arizona Administrative Code ("AAC") R14-2-410 and the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. In support of the Company's water conservation goals, the Company may bring an action for damages or to enjoin any activity against a person who: (1) makes a connection or reconnection with property owned or used by the Company to provide utility service without the Company's authorization or consent; (2) prevents a Company meter or other device used to determine the charge for utility services from accurately performing its measuring function; (3) tampers with property owned or used by the Company; or (4) uses or receives the Company's services without the authorization or consent of the Company and knows or has reason to know of the unlawful diversion, tampering or connection. If the Company's action is successful, the Company may recover as damages three times the amount of actual damages.
2. Compliance with the provisions of this tariff will be a condition of service.
3. The Company shall make available to all its customers a complete copy of this tariff and AAC R14-2-410. The customers shall follow and abide by this tariff.
4. If a customer is connected to the Company water system and the Company discovers that the customer has taken any of the actions listed in No. 1 above, the Company may terminate service per AAC R14-2-410.
5. If a customer believes he/she has been disconnected in error, the customer may contact the Commission's Consumer Services Section at 1-800-222-7000 to initiate an investigation.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

Meter Repair and/or Replacement Tariff – BMP 4.2

PURPOSE

A program for the Company to systematically assess all in-service water meters (including Company production meters) in its water service area to identify under-registering meters and to repair or replace them (Modified Non-Per Capita Conservation Program Best Management Practice Category 4: Physical System Evaluation and Improvement 4.2 Meter Repair and/or Replacement Program).

REQUIREMENTS

The requirements of this tariff are governed by Rules of the Arizona Corporation Commission and were adapted from the Arizona Department of Water Resources' Required Public Education Program and Best Management Practices in the Modified Non-Per Capita Conservation Program.

1. The Company will test, repair, or replace water meters in accordance with its meter testing and replacement guidelines, which include, but are not limited to, usage and length of time in service, as appropriate and necessary to maintain acceptable water meter accuracy.
2. The Company will test all meters that have caused a meter reading complaint to be filed with the Arizona Corporation Commission.
3. Meters larger than 2-inch shall be tested for one of the following reasons:
 - a. A meter reading complaint is filed with the Company by a customer or Arizona Corporation Commission Staff,
 - b. A meter has been in service for five years.
4. The test will be accomplished by one of the following:
 - a. Having the meter pulled and having a Company Technician physically inspect each meter and its fittings for leaks, registers which may have become loose or are not properly attached to the meter and could be under-registering or other broken parts which need repair.
 - b. Utilizing equipment to verify that all electronic components are within manufacturer specifications and are operating properly.
5. In addition, meters shall be randomly selected for flow testing utilizing a flow through detector testing meter.
6. All replacement water meters shall register in gallons:
 - a. All new 1-inch and smaller meters that are installed will register usage in 1 gallon increments,
 - b. All new 1-1/2-inch through 4-inch meters that are installed will register in 10 gallon increments, and
 - c. All new 6-inch and larger meters that are installed will register in 100 gallon increments.

Company: _____

Decision No.: _____

Phone: _____

Effective Date: _____

7. The Company shall keep records on the number of meters that were replaced and make this information available to the Commission upon request.

Chaparral City Water Company
Docket No. W-02113A-13-0118

Plan of Administration
System Improvement Benefit Mechanism ("SIB")

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EXHIBITS

SIB PLANT TABLE I	Exhibit 1
SIB PLANT TABLE II	Exhibit 2
SIB SCHEDULE A - CALCULATION OF OVERALL SIB REVENUE REQUIREMENTS AND EFFICIENCY CREDIT	Exhibit 3
SIB SCHEDULE B - CALCULATION OF SIB TRUE-UP REVENUE REQUIREMENTS ADJUSTMENT	Exhibit 4
SIB SCHEDULE C - TYPICAL BILLS ANALYSIS.....	Exhibit 5
SIB SCHEDULE D - SUMMARY OF REVENUE AND RATE BASE IMPACTS INCLUDING EARNINGS TEST	Exhibit 6

I. GENERAL DESCRIPTION

This document is the Plan of Administration ("POA") for the System Improvement Benefits ("SIB") Mechanism approved for Chaparral City Water Company ("CCWC" or "Company") by the Arizona Corporation Commission ("ACC" or "Commission") in Decision No. _____ on _____. The SIB provides for recovery of the capital costs (return on investment, income taxes and depreciation expense) associated with distribution system improvement projects listed in SIB Plant Table I that have been verified to be completed,¹ net of associated retirements and placed in service per SIB Plant Table II and where costs have not been included in rate base for recovery in Decision No. _____. Any expenditures offset by contributions in aid of construction or advances in aid of construction are not eligible for inclusion in the SIB.

II. DEFINITIONS

- NARUC – National Association of Regulatory Utility Commissioners
- SIB – System Improvement Benefit mechanism to be implemented between rate proceedings to support investment in plant recorded in SIB Eligible NARUC accounts.
- SIB Eligible Plant – Investments in plant recorded in SIB Eligible NARUC accounts.
- SIB Eligible NARUC accounts:
 - NARUC Account No. 309 – Supply Mains
 - NARUC Account No. 331 – Mains
 - NARUC Account No. 333 – Services
 - NARUC Account No. 334 - Meters and Meter Installations;
 - NARUC Account No. 335 – Hydrants
- SIB Plant Table I (Excerpt attached as Exhibit 1)² – The schedule of planned SIB eligible projects approved in the Company's most recent rate case decision.

¹ Acceptable form of verifications may include the Maricopa County Environmental Services Department Approval of Construction, Professional Engineer's Certificate of Completion, etc.

² See Company filing of August 22, 2013.

- SIB Plant Table II (Sample attached as Exhibit 2) – The schedule of completed and verified SIB eligible projects from SIB Plant Table I and associated retirements.
- Total Revenue Requirement – The revenue requirement approved in Decision No. _____, plus the SIB Revenue Requirement.
- SIB Revenue Requirement – The revenue requirement equal to the return on investment, income taxes and depreciation expense necessary to support the SIB Plant Table II amounts.
- SIB Revenue Requirement Efficiency Credit – An amount equal to 5 percent of the SIB Revenue Requirement.
- SIB Authorized Revenue – Amount equal to the SIB Revenue Requirement less the SIB Revenue Requirement Efficiency Credit plus any SIB True up Adjustment.
- Gross SIB Surcharge – Amount to be shown on customers' bills based on meter sizes without consideration to the SIB Surcharge Efficiency Credit.
- SIB Surcharge Efficiency Credit – An amount equal to 5 percent of the Gross SIB Surcharge to be shown on customers' bills.
- SIB Surcharge – The amount equal to the Gross SIB Surcharge less the SIB Surcharge Efficiency Credit to be charged based on meter size, calculated to recover the SIB Authorized Revenue, to be shown on the customers' bills.
- SIB True-up Adjustment – An amount to adjust for over or under collection of the SIB Authorized Revenues as compared with the total SIB Surcharges collected for the preceding 12 month period. Each true-up shall also analyze the cumulative over or under collections to include a comparison of all past SIB Authorized Revenues, total SIB Surcharge collections, and prior true-ups to be used in calculation of the SIB true-up surcharge or credit.

III. SIB RELATED FILINGS

- A. Progress Reports – Once a SIB is approved in a decision, the Company must file with Docket Control semi-annual status reports delineating the status of all SIB Eligible Plant, on a project by project basis as listed in SIB Plant Table I, starting 6 months after the decision and every 6 months thereafter.
- B. Reconciliation and True Up – Once a SIB Surcharge is implemented, the Company must file annually to true up its SIB Surcharge collections over the

preceding twelve months with the SIB Authorized Revenue for that period and establish a surcharge or credit to true up over or under collections, regardless of whether it seeks a new surcharge. The filing dates for these annual true-ups shall be as established in the Commission's Decision approving the SIB Surcharge.

- C. SIB Surcharge Requests – To obtain its SIB Surcharge the Company must file the following:
1. SIB Plant Table II (with supporting information and documentation), showing the SIB eligible projects completed for which the Company seeks cost recovery. Such projects must
 - a) be projects listed in the Company's initial SIB Plant Table I, approved in Decision No. _____, or have been added to said SIB Plant Table I pursuant to Section V of this POA;
 - b) have been completed by the Company;
 - c) have been verified; and
 - d) be actually serving customers.
 2. A summary of Commission approved SIB-eligible projects contemplated for the next twelve (12)-month SIB surcharge period from SIB Plant Table I.
 3. SIB Schedule A (sample attached as Exhibit 3), showing a calculation of the SIB Revenue Requirement and SIB Revenue Requirement Efficiency Credit, SIB Authorized Revenue, Gross SIB Surcharge, SIB Surcharge Efficiency Credit, and the SIB Surcharge. Schedule A shall be supported by revenue requirements schedules supporting the revenue requirements in Decision No. _____ and the pro-forma revenue requirements including the effects of SIB Eligible Plant.
 4. Schedule B (sample attached as Exhibit 4) showing the overall SIB True-up Adjustment calculation for the prior twelve-month SIB Surcharge period, as well as the individual SIB True-up Adjustment for each meter size.
 5. SIB Schedule C (sample attached as Exhibit 5) showing the effect of the SIB Surcharge on a typical residential customer bill for both median and average usage.

6. SIB Schedule D (sample attached as Exhibit 6) which shall include an analysis of the impact of the SIB Eligible Plant on the fair value rate base, revenue, and the fair value rate of return. The Company shall also file the following:
 - a) the most current balance sheet at the time of the filing;
 - b) the most current income statement;
 - c) an earnings test schedule;
 - d) a rate review schedule (including the incremental and pro forma effects of the proposed increase);
 - e) an adjusted rate base schedule; and
 - f) a Construction Work in Progress ledger (for each project showing accumulation of charges by month and paid vendor invoices).
- D. The Company will maintain and provide Excel schedules with formulae intact supporting the revenue requirements approved in the rate decision that approved the SIB and provide same Excel schedules to incorporate the effects of SIB Eligible Plant for the current SIB Surcharge Request and any previously approved Surcharge and True-up requests.
- E. The Company may make its initial SIB Surcharge Request through Docket Control no earlier than twelve months after the entry of Decision No. _____.
- F. The Company may make no more than one SIB Surcharge Request every twelve months with no more than five SIB Surcharge Requests between rate case decisions. A True-up must be filed with each Surcharge Request, except the first.
- G. Unless otherwise authorized by the Commission, the Company shall be required to file its next general rate case no later than June 30, 2018, with a test year ending no later than December 31, 2017.
- H. Any SIB Surcharges that are in effect shall be reset to zero upon the date new rates become effective in the Company's next general rate case.
- I. The Company may request to add Plant to SIB Table I only under emergency circumstances. Any additions or modifications to SIB Plant Table I must be approved by the Commission.

IV. SURCHARGE CALCULATIONS

A. Calculations of Amounts to Be Collected By the SIB Surcharge

1. The amount to be collected by the SIB Authorized Revenue shall be equal to the SIB Revenue Requirement minus the SIB Revenue Requirements Efficiency Credit plus any SIB True up Adjustment.
For purposes of calculating the SIB Revenue Requirement:
 - a. The required rate of return is equal to the overall rate of return authorized in Decision No. _____.
 - b. The gross revenue conversion factor/tax multiplier is equal to the gross revenue conversion factor/tax multiplier approved in Decision No. _____; and
 - c. The applicable depreciation rate(s) is equal to the depreciation rate(s) approved in Decision No. _____.
2. The project cost to be used in calculating the SIB Revenue Requirement shall be the lesser of the actual project cost listed in SIB Plant Table II or 110 percent of the estimated cost listed in SIB Plant Table I as approved in Decision No. _____. Unit costs shall be used if actual units constructed are less than estimated in SIB Plant Table I.
3. The amount to be collected by each SIB Surcharge Request shall be capped annually at five percent of the revenue requirement authorized in Decision No. _____.

B. Reconciliation And True-Ups

1. The revenue collected by the total SIB Surcharges over the preceding twelve months shall be trued-up and reconciled with the SIB Authorized Revenue for that period.
2. A new SIB Surcharge shall be combined with an existing SIB Surcharge such that a single SIB surcharge and SIB Efficiency Credit are shown on a customer's bill.
3. For each twelve (12) month period that a SIB surcharge is in effect, the Company shall reconcile the amounts collected by the SIB Surcharge with the SIB Authorized Revenue, for that twelve (12)-month period, consistent with Schedule B, attached hereto as Exhibit B.

4. Any under- or over-collected SIB Authorized Revenues shall be recovered or refunded, without interest, over a twelve-month period by means of a SIB True-up Surcharge or Credit.
5. Starting with the second annual SIB Surcharge, where there are over or under-collected balances, such over or undercollected balances shall be carried over to the next year, and considered in the calculation of the new SIB True-up Surcharge or Credit. If, after the five-year period there remains an over or undercollected balance, such balance shall be reset to zero, and addressed in the next rate case.

C. Earnings Test

1. Once a SIB Surcharge is in effect, the Company shall be required to perform an annual earnings test calculation for each SIB Surcharge Request to determine whether the actual rate of return reflected by the operating income for the affected system or division for the relevant 12-month period exceeded the most recently authorized fair value rate of return for the affected system or division.
2. The earnings test shall be:
 - a) based on the most recent available operating income,
 - b) adjusted for any operating revenue and expense adjustments adopted in the most recent general rate case; and
 - c) based on the rate base adopted in the most recent general rate case, updated to recognize changes in plant, accumulated depreciation, contributions in aid of construction, advances in aid of construction, and accumulated deferred income taxes through the most recent available financial statement (quarterly or longer).

V. **ADDING PROJECTS TO SIB TABLE I UNDER EMERGENCY CIRCUMSTANCES**

- A. The Company can seek Commission approval to add projects in SIB Plant Table I only in the event of emergency circumstances. No such changes may be made without Commission approval.
- B. Any addition to SIB Plant Table I must be plant investment that maintains or improves existing customer service, system reliability, integrity and safety. Eligible plant additions are limited to plant replacement projects. The costs of

extending facilities or capacity to serve new customers are not recoverable through the SIB mechanism.

- C. To be eligible for SIB treatment, a project must be SIB Eligible Plant.
- D. SIB Eligible Plant must satisfy at least one of the following criteria:
 - 1. Water loss for the system exceeds ten (10) percent, as calculated by the following formula: $((\text{Volume of Water Produced and/ or Purchased}) - (\text{Volume of Water Sold} + \text{Volume of Water Put to Beneficial Use}))$ divided by $(\text{Volume of Water Produced and/or Purchased})$. If the Volume of Water Put to Beneficial Use is not metered, it shall be established in a reliable, verifiable manner.
 - 2. Plant assets that have remained in service beyond their useful service lives (based on the Company's system's authorized utility plant depreciation rates) and are in need of replacement due to being worn out or in a deteriorating condition through no fault of the Company;
 - 3. Any other engineering, operational or financial justification supporting the need for a plant asset replacement, other than the Company's negligence or improper maintenance, including, but not limited to:
 - a. A documented increasing level of repairs to, or failures of, a plant asset justifying its replacement prior to reaching the end of its useful service life (e.g. black poly pipe);
 - b. Assets that are required to be moved, replaced or abandoned by a governmental agency or political subdivision if the Company can show that it has made a good faith effort to seek reimbursement for all or part of the costs incurred.

VI. RATE DESIGN

- A. The SIB Surcharge rate design shall be calculated as follows:
 - 1) The SIB Surcharge shall be a fixed monthly surcharge containing a Gross SIB Surcharge and the SIB Surcharge Efficiency Credit as its two components.
 - 2) The SIB Surcharge shall be calculated by dividing the SIB Authorized Revenue by the number of equivalent active 5/8-inch meters at the end of the most recent twelve (12) month period, and shall increase with meter size based on the following meter capacity multipliers:

5/8-inch x 3/4-inch	1.0 times
3/4-inch	1.5 times
1-inch	2.5 times
1 1/2-inch	5 times
2-inch	8 times
3-inch	16 times
4-inch	25 times
6-inch	50 times
8-inch	80 times
10-inch & above	115 times

- B. The SIB Surcharge shall apply to all of the Company's metered customers, including private fire service customers.

VII. SURCHARGE IMPLEMENTATION

- A. SIB surcharges shall not become effective until approved by the Commission.
- B. At least 30 days prior to the SIB surcharge becoming effective, the Company shall provide public notice in the form of a billing insert or customer letter in a form acceptable to Staff. Such notice shall include the following information:
1. The individual Gross SIB Surcharge, by meter size;
 2. The individual SIB Surcharge Efficiency Credit, by meter size;
 3. SIB Surcharge, by meter size; and
 4. Directions where the customer may obtain a summary of the projects included in the current SIB Surcharge Request, including a description of each project and its cost.

SIB Table I

(Exhibit CC-2)

EPCOR Water (USA) Inc.

Chaparral City Water Company/Fountain Hills

PWS ID No. 07-017

August 21, 2013

SIB PLANT TABLE I, 1-1**2014 Service Line Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
S-1	333	service lines	40	3/4" & 1"	Copper	\$3,881	Ocotillo	12/2014	n/a	\$155,232	Replace 40 residential services (3/4" or 1") on Ocotillo between Mustang and Fountain Hills Blvd. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed about 40 years ago, in 1974. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-1 in Exhibit CC-1 for the locations of the replacements.
S-2	333	service lines	105	3/4" & 1"	Copper	\$3,881	Mustang	12/2014	n/a	\$407,484	Replace 105 residential services (3/4" or 1") on Mustang between Palisades and Fountain Hills Blvd. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed about 38 years ago, in 1976. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-2 in Exhibit CC-1 for the locations of the replacements.

S-3	333	service lines	13	¾" & 1"	Copper	\$3,881	Spotted Horse	12/2014	n/a	\$50,450	Replace 13 residential services (¾" or 1") on Spotted Horse between Mustang and Westridge. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed about 35 years ago, in 1979. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-3 in Exhibit CC-1 for the locations of the replacements.
S-4	333	service lines	37	¾" & 1"	Copper	\$3,881	Buffalo	12/2014	n/a	\$143,590	Replace 37 residential services (¾" or 1") on Buffalo between Mustang and Fountain Hills Blvd. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed about 38 years ago, in 1976. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-4 in Exhibit CC-1 for the locations of the replacements.
S-5	333	service lines	9	¾" & 1"	Copper	\$3,881	Garland	12/2014	n/a	\$34,927	Replace 9 residential services (¾" or 1") on Garland between Buffalo and Palatial. The services are branched black poly lines (one service for two customers) that are failing at a high rate. The services are located on a short dead-end street off of Buffalo, which is scheduled for service line replacements in the same year (project S-4). Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-5 in Exhibit CC-1 for the locations of the replacements.
S-6	333	service lines	43	¾" & 1"	Copper	\$3,881	Pinto	12/2014	n/a	\$166,874	Replace 43 residential services (¾" or 1") on Pinto between Palomino and Fountain Hills Blvd. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed about 38 years ago, in 1976. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-6 in Exhibit CC-1 for the locations of the replacements.
Total			247							\$958,558	

SIB PLANT TABLE I, 1-2**2015 Service Line Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
S-7	333	service lines	44	3/4" & 1"	Copper	\$3,881	Sycamore	12/2015	n/a	\$170,755	Replace 44 residential services (3/4" or 1") on Sycamore between Thistle and Ocotillo. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1974 and will be 41 years old in 2015. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-7 in Exhibit CC-1 for the locations of the replacements.
S-8	333	service lines	13	3/4" & 1"	Copper	\$3,881	Winchester	12/2015	n/a	\$50,450	Replace 13 residential services (3/4" or 1") on Winchester between Sunburst and Palomino. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority due to their vicinity to the other projects being completed this year, and also because these services are in a very high pressure area (>120 psi), and are therefore more susceptible to failure. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-8 Exhibit CC-1 for the locations of the replacements.

S-9	333	service lines	31	¾" & 1"	Copper	\$3,881	Ridgeway	12/2015	n/a	\$120,305	Replace 31 residential services (¾" or 1" on Ridgeway between Palisades and Winchester. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1976 and will be 39 years old in 2015. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-9 Exhibit CC-1 for the locations of the replacements.
S-10	333	service lines	54	¾" & 1"	Copper	\$3,881	Sunburst	12/2015	n/a	\$209,563	Replace 54 residential services (¾" or 1" on Sunburst between Palisades and Sycamore. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority due to their vicinity to the other projects being completed this year, and also because these services are in a very high pressure area (>120 psi), and are therefore more susceptible to failure. Additionally, homes on this street a very large, and are therefore expected to use more water, which reduces meter accuracy faster. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-10 Exhibit CC-1 for the locations of the replacements.
S-11	333	service lines	28	¾" & 1"	Copper	\$3,881	Burro	12/2015	n/a	\$108,662	Replace 28 residential services (¾" or 1" on Burro between Palomino and Pinchushion. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1978 and will be 37 years old in 2015. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-11 Exhibit CC-1 for the locations of the replacements.
S-12	333	service lines	26	¾" & 1"	Copper	\$3,881	Greystone	12/2015	n/a	\$100,901	Replace 26 residential services (¾" or 1" on Greystone between Sunburst and Sycamore. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are in the vicinity of the other service line replacements for 2015 and will be about 29 years old. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-12 Exhibit CC-1 for the locations of the replacements.

S-13	333	service lines	25	3/4" & 1"	Copper	\$3,881	Telegraph	12/2015	n/a	\$97,020	Replace 25 residential services (3/4" or 1") on Telegraph between Greystone and Sunburst. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are in the vicinity of the other service line replacements for 2015 and will be about 29 years old. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-13 Exhibit CC-1 for the locations of the replacements.
Total			221							\$857,656	

SIB PLANT TABLE I, 1-3**2016 Service Line Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
S-14	333	service lines	95	3/4" & 1"	Copper	\$3,881	Cholla	12/2016	n/a	\$368,676	Replace 95 residential services (3/4" or 1") on Cholla between Chicory and Fountain Hills Blvd. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1973 and will be 43 years old in 2016. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-14 Exhibit CC-1 for the locations of the replacements.
S-15	333	service lines	49	3/4" & 1"	Copper	\$3,881	Chicory	12/2016	n/a	\$190,159	Replace 49 residential services (3/4" or 1") on Chicory between Sycamore and Thistle. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed around 1974 and will be approximately 42 years old in 2016. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-15 Exhibit CC-1 for the locations of the replacements.

S-16	333	service lines	26	3/4" & 1"	Copper	\$3,881	Verbena	12/2016	n/a	\$100,901	Replace 26 residential services (3/4" or 1") on Verbena between Sage and El Lago. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed around 1978 and will be approximately 38 years old in 2016. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-16 Exhibit CC-1 for the locations of the replacements.
S-17	333	service lines	56	3/4" & 1"	Copper	\$3,881	El Lago	12/2016	n/a	\$217,325	Replace 56 residential services (3/4" or 1") on El Lago between Palisades and Fountain Hills Blvd. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed around 1979 and will be approximately 37 years old in 2016. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-17 Exhibit CC-1 for the locations of the replacements.
S-18	333	service lines	30	3/4" & 1"	Copper	\$3,881	Cavern	12/2016	n/a	\$116,424	Replace 30 residential services (3/4" or 1") on Cavern between Palisades and El Lago. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed around 1979 and will be approximately 37 years old in 2016. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-18 in Exhibit CC-1 for the locations of the replacements.
Total			256							\$993,485	

SIB PLANT TABLE I, 1-4**2017 Service Line Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
S-19	333	service lines	56	¾" & 1"	Copper	\$3,881	Mimosa	12/2017	n/a	\$217,325	Replace 56 residential services (¾" or 1") on Mimosa between Sunflower and Thistle. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed around 1975 and will be approximately 42 years old in 2017. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-19 in Exhibit CC-1 for the locations of the replacements.
S-20	333	service lines	34	¾" & 1"	Copper	\$3,881	Mountainside	12/2017	n/a	\$131,947	Replace 34 residential services (¾" or 1") on Mountainside between Palisades and Thistle. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1975 and will be 42 years old in 2017. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-20 in Exhibit CC-1 for the locations of the replacements.

S-21	333	service lines	31	¾" & 1"	Copper	\$3,881	Echo Hill	12/2017	n/a	\$120,305	Replace 31 residential services (¾" or 1" on Echo Hill between El Lago and Mimosa. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1979 and will be 38 years old in 2017. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-21 in Exhibit CC-1 for the locations of the replacements.
S-22	333	service lines	84	¾" & 1"	Copper	\$3,881	El Pueblo	12/2017	n/a	\$325,987	Replace 84 residential services (¾" or 1" on El Pueblo between Fountain Hills Blvd and Caliente. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1972 and will be 45 years old in 2017. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-22 in Exhibit CC-1 for the locations of the replacements.
S-23	333	service lines	55	¾" & 1"	Copper	\$3,881	Oro Grande, Pampas	12/2017	n/a	\$213,444	Replace 55 residential services (¾" or 1" on Oro Grande and Pampas between Calle del Prado and Tejon. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed around 1974 and will be approximately 43 years old in 2017. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-23 in Exhibit CC-1 for the locations of the replacements.
Total			260							\$1,009,008	

SIB PLANT TABLE I, 1-5**2018 Service Line Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
S-24	333 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	service lines	39	3/4" & 1"	Copper	\$3,881	Alamosa	12/2018	n/a	\$151,351	Replace 39 residential services (3/4" or 1") on Alamosa between El Pueblo and Del Cambre. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1972 and will be 46 years old in 2018. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-24 in Exhibit CC-1 for the locations of the replacements.
S-25	333	service lines	41	3/4" & 1"	Copper	\$3,881	Caliente Bowstring	12/2018	n/a	\$159,113	Replace 41 residential services (3/4" or 1") on Caliente and Bowstring between Tejon and El Pueblo. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1973 and will be 45 years old in 2018. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-25 in Exhibit CC-1 for the locations of the replacements as well as the location of historical replacements in the area.

S-26	333	service lines	24	¾" & 1"	Copper	\$3,881	El Sobrante	12/2018	n/a	\$93,139	Replace 24 residential services (¾" or 1") on El Sobrante between Baca and Calvaras. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1972 and will be 46 years old in 2018. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-26 in Exhibit CC-1 for the locations of the replacements.
S-27	333	service lines	22	¾" & 1"	Copper	\$3,881	Mirage Crossing	12/2018	n/a	\$85,378	Replace 22 residential services (¾" or 1") on Mirage Crossing between El Pueblo and Alamosa. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services will be 27 years old in 2018. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-27 in Exhibit CC-1 for the locations of the replacements.
S-28	333	service lines	30	¾" & 1"	Copper	\$3,881	Calle Del Prado	12/2018	n/a	\$116,424	Replace 30 residential services (¾" or 1") on Calle Del Prado between El Pueblo and Del Cambre. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1973 and will be 45 years old in 2018. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-28 in Exhibit CC-1 for the locations of the replacements.
S-29	333	service lines	39	¾" & 1"	Copper	\$3,881	Tejon, Buena Vida, Rica Vida, and Agave	12/2018	n/a	\$151,351	Replace 39 residential services (¾" or 1") on Tejon, Buena Vida, Rica Vida, and Agave between El Sobrante and El Pueblo. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed around 1977 and will be approximately 46 years old in 2018. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-29 in Exhibit CC-1 for the locations of the replacements.

S-30	333	service lines	36	¾" & 1"	Copper	\$3,881	Deerskin	12/2018	n/a	\$139,709	Replace 36 residential services (¾" or 1") on Deerskin between Alamosa and Del Cambre. The services are branched black poly lines (one service for two customers) that are failing at a high rate. These services are a priority because they were installed in 1973 and will be 45 years old in 2018. Replacing the services will help reduce system water loss and improve customer pressure and flow with a single service for each customer. The service line replacements are for existing customers and not related to new growth. See Map No. S-30 for the locations of the replacements.
Total			231							\$896,465	

SIB PLANT TABLE I, 2-1**2014 Valve Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)				Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)	Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
V-1	331 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	gate valves	28	23-6" 1-8" 4-12"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201 12"-\$6,173	12/2014	n/a	\$136,862	Replace 23-6", 1-8", 4-12" valves (28 total) on Palomino between Palisades and Fountain Hills Blvd. Distribution system valves that are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves are a priority because they were installed in 1976 and will be 38 years old in 2014. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-1 in Exhibit CC-1 shows the location of these valves.
V-2	331	gate valves	34	31-6" 1-4" 2-12"	cast iron with rubberized epoxy coating	4"-\$4,431 6"-\$4,651 12"-\$6,173	12/2014	n/a	\$160,952	Replace 31-6", 1-4", and 2-12" valves (34 total) on Mustang between Palisades and Fountain Hills Blvd. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves are a priority because they were installed in 1977 and will be 37 years old in 2014. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-2 in Exhibit CC-1 shows the location of these valves.

V-3	331	gate valves	1	6"	cast iron with rubberized epoxy coating	\$4,651	Spotted Horse	12/2014	n/a	\$4,651	Replace 1-6" valve on Spotted Horse between Mustang and Westridge. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. This valve is a priority because it was installed in 1979 and will be 35 years and is needed in order to operate the only hydrants on this street. Replacing valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-3 in Exhibit CC-1 shows the location of this valve.
V-4	331	gate valves	10	6"	cast iron with rubberized epoxy coating	\$4,651	Buffalo	12/2014	n/a	\$46,508	Replace 10-6" valves on Buffalo between Mustang and Fountain Hills Blvd. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves are a priority because they were installed in 1976 and will be 38 years old in 2014. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-4 in Exhibit CC-1 shows the location of these valves.
V-5	331	gate valves	1	6"	cast iron with rubberized epoxy coating	\$4,651	Garland	12/2014	n/a	\$4,651	Replace 1-6" valve on Garland between Buffalo and Palatial. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. This valve is suffering from corrosion and is the only way to isolate Garland Circle. Replacing valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-5 in Exhibit CC-1 shows the location of this valve.
V-6	331	gate valves	10	6"	cast iron with rubberized epoxy coating	\$4,651	Pinto	12/2014	n/a	\$46,508	Replace 10-6" valves on Pinto between Palomino and Fountain Hills Blvd. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves are a priority because they were installed in 1976 and will be 38 years old in 2014. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-6 in Exhibit CC-1 shows the location of these valves.

V-7	331	gate valves	11	6-6" 4-8"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201	Ocotillo	12/2014	n/a	\$53,359	Replace 6-6" and 4-8" valves (10 total) on Ocotillo between Mustang and Fountain Hills Blvd. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves are a priority because they were installed in 1974 and will be 40 years old in 2014. Replacing the valves of main break or other system maintenance which reduces decreases time required to shutdown water main in the event a main break. The valve replacements are not related to new growth. Map V-7 in Exhibit CC-1 shows the location of these valves.
Total			95							\$453,491	

SIB PLANT TABLE I, 2-2**2015 Valve Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)				Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)	Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
V-8	331 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	gate valves	14	1-4" 9-6" 4-12"	cast iron with rubberized epoxy coating	4"-\$4,431 6"-\$4,651 12"-\$6,173	12/2015	n/a	\$70,981	Replace 1-4", 9-6", 4-12" valves (14 total) on Sycamore between Thistle and Ocotillo. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed around 1976 and will be approximately 39 years old in 2015. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-8 in Exhibit CC-1 shows the location of these valves.
V-9	331	gate valves	6	6"	cast iron with rubberized epoxy coating	\$4,651	12/2015	n/a	\$27,905	Replace 6-6" valves on Winchester between Sunburst and Palomino. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves will be 17-39 years old and are located in a high pressure area. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-9 in Exhibit CC-1 shows the location of these valves.

V-10	331	gate valves	9	6"	cast iron with rubberized epoxy coating	\$4,651	Ridgeway	12/2015	n/a	\$41,857	Replace 9-6" valves on Ridgeway between Palisades and Winchester. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed around 1976 and will be approximately 39 years old in 2015. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-10 in Exhibit CC-1 shows the location of these valves.
V-11	331	gate valves	18	6"	cast iron with rubberized epoxy coating	\$4,651	Sunburst	12/2015	n/a	\$83,714	Replace 18-6" valves on Sunburst between Palisades and Sycamore. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves will be approximately 17-29 years old and are located in a high pressure area. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-11 in Exhibit CC-1 shows the location of these valves.
V-12	331	gate valves	15	6"	cast iron with rubberized epoxy coating	\$4,651	Greystone	12/2015	n/a	\$69,762	Replace 15-6" valve on Greystone between Sunburst and Sycamore. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves will be approximately 29 years old in 2015. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-12 in Exhibit CC-1 shows the location of these valves.
V-13	331	gate valves	8	6"	cast iron with rubberized epoxy coating	\$4,651	Telegraph	12/2015	n/a	\$37,206	Replace 8-6" valves on Telegraph between Greystone and Sunburst. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves will be approximately 29 years old in 2015. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-13 in Exhibit CC-1 shows the location of these valves.
V-14	331	gate valves	4	6"	cast iron with rubberized epoxy coating	\$4,651	Tacony	12/2015	n/a	\$18,603	Replace 4-6" valves on Tacony between Greystone and Telegraph. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves will be approximately 29 years old in 2015. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-14 in Exhibit CC-1 shows the location of these valves.

V-15	331	gate valves	11	5-6" 1-8" 5-12"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201 12"-\$6,173	Mimosa	12/2015	n/a	\$59,321	Replace 5-6", 1-8", and 5-12" (11 total) valves on Mimosa between Sunflower and Thistle. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1976 and will be 39 years old in 2015. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-15 in Exhibit CC-1 shows the location of these valves.
V-16	331	gate valves	18	1-4" 13-6" 4-8"	cast iron with rubberized epoxy coating	4"-\$4,431 6"-\$4,651 8"-\$5,201	Cholla	12/2015	n/a	\$85,694	Replace 1-4", 13-6", and 4-8" (18 total) valves on Cholla between Chicory and Fountain Hills Blvd. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed around 1975 and will be approximately 40 years old in 2015. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-16 in Exhibit CC-1 shows the location of these valves.
Total			103							\$495,043	

SIB PLANT TABLE I, 2-3**2016 Valve Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
V-17	331 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	gate valves	8	5-6" 3-12"	cast iron with rubberized epoxy coating	6"-\$4,651 12"-\$6,173	Chicory	12/2016	n/a	\$41,744	Replace 5-6" and 3-12" (8 total) valves on Chicory between Sycamore and Thistle. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1974 and will be 42 years old in 2016. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-17 in Exhibit CC-1 shows the location of these valves.
V-18	331	gate valves	6	5-6" 1-8"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201	Verbena	12/2016	n/a	\$28,433	Replace 5-6" and 1-8" (6 total) valves on Verbena between Sage and El Lago. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed around 1977 and will be approximately 39 years old in 2016. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-18 in Exhibit CC-1 shows the location of these valves.

V-19	331	gate valves	12	9-6" 3-12"	cast iron with rubberized epoxy coating	6"-\$4,651 12"-\$6,173	Sage	12/2016	n/a	\$60,377	Replace 9-6" and 3-12" (12 total) valves on Sage between Palisades and Stardust. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed between 1975 and 1989 and will be approximately 27 to 41 years old in 2016. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-19 in Exhibit CC-1 shows the location of these valves.
V-20	331	gate valves	6	3-6" 3-12"	cast iron with rubberized epoxy coating	6"-\$4,651 12"-\$6,173	Ironwood	12/2016	n/a	\$32,472	Replace 3-6" and 3-12" (6 total) valves on Ironwood between Thistle and Fountain Hills Blvd. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These were installed in 1973 and will be 43 years old in 2016. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-20 in Exhibit CC-1 shows the location of these valves.
V-21	331	gate valves	19	1-4" 11-6" 5-8" 2-12"	cast iron with rubberized epoxy coating	4"-\$4,431 6"-\$4,651 8"-\$5,201 12"-\$6,173	Thistle	12/2016	n/a	\$93,940	Replace 1-4", 11-6", 5-8", and 2-12" (19 total) valves on Thistle between Palisades and Mountside Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed around 1976 and will be approximately 40 years old in 2016. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-21 in Exhibit CC-1 shows the location of these valves.
V-22	331	gate valves	21	10-6" 11-8"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201	El Lago	12/2016	n/a	\$103,717	Replace 10-6" and 11-8" (21 total) valves on El Lago between Palisades and Fountain Hills Blvd Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed around 1979 and will be approximately 37 years old in 2016. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-22 in Exhibit CC-1 shows the location of these valves.

V-23	331	gate valves	16	13-6" 3-8"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201	Sunflower	12/2016	n/a	\$76,063	Replace 13-6" and 3-8" (16 total) valves on Sunflower between Cactus and Mountainside. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed between 1975 and 1995 and will be approximately 21 to 41 years old in 2016. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-23 in Exhibit CC-1 shows the location of these valves.
Total			88							\$436,776	

SIB PLANT TABLE I, 2-4**2017 Valve Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
V-24	331 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	gate valves	8	6"	cast iron with rubberized epoxy coating	\$4,651	Cavern	12/2017	n/a	\$37,206	Replace 8-6" valves on Cavern between Palisades and El Lago. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1979 and will be 38 years old in 2017. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-24 in Exhibit CC-1 shows the location of these valves.
V-25	331	gate valves	7	4-6" 3-8"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201	Jackrabbit	12/2017	n/a	\$34,206	Replace 4-6" and 3-8" (7 total) valves on Jackrabbit between Palisades and Sunflower. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1997. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-25 in Exhibit CC-1 shows the location of these valves.

V-26	331	gate valves	16	9-6" 4-8" 3-12"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201 12"-\$6,173	Mountain- side	12/2017	n/a	\$81,180	Replace 9-6", 4-8", and 3-12" (16 total) valves on Mountainside between Palisades and Thistle Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1978 and will be 39 years old in 2017. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-26 in Exhibit CC-1 shows the location of these valves.
V-27	331	gate valves	6	4-6" 2-8"	cast iron with rubberized epoxy coating	6"-\$4,651 8"-\$5,201	Echo Hill	12/2017	n/a	\$29,005	Replace 4-6" and 2-8" (6 total) valves on Echo Hill between El Lago and Mimosa. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1979 and will be 38 years old in 2017. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-27 in Exhibit CC-1 shows the location of these valves.
V-28	331	gate valves	14	6"	cast iron with rubberized epoxy coating	\$4,651	Tumble- weed	12/2017	n/a	\$65,111	Replace 14-6" valves on Tumbleweed between Cavern and Mountainside. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed between 1975 and 1990 and will be 27 to 42 years old in 2017. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-28 in Exhibit CC-1 shows the location of these valves.
V-29	331	gate valves	14	6"	cast iron with rubberized epoxy coating	\$4,651	Ponderosa	12/2017	n/a	\$65,111	Replace 14-6" valves on Ponderosa between Primrose and Mountainside Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed between 1975 and 1989 and will be 28 to 42 years old in 2017. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-29 in Exhibit CC-1 shows the location of these valves.

V-30	331	gate valves	9	6"	cast iron with rubberized epoxy coating	\$4,651	Lantana, Jericho, Brodiea	12/2017	n/a	\$41,857	Replace 9-6" valves on Lantana, Jericho, and Brodiea between El Lago and Mimosa. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1979 and will be 38 years old in 2017. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-30 in Exhibit CC-1 shows the location of these valves.
Total			74							\$353,676	

SIB PLANT TABLE I, 2-5**2018 Valve Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (DSIC-eligible plant)				Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (Estimated)	Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
V-31	331 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	gate valves	33	1-4" 19-6" 5-8" 8-12"	cast iron with rubberized epoxy coating	4"-\$4,431 6"-\$4,651 8"-\$5,201 12"-\$6,173	12/2018	n/a	\$168,186	Replace 1-4", 19-6", 5-8", 8-12" (33 total) valves on El Pueblo between Fountain Hills Blvd and Escalante. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1973 and will be 45 years old in 2018. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-31 in Exhibit CC-1 shows the location of these valves.
V-32	331	gate valves	13	1-4" 12-6"	cast iron with rubberized epoxy coating	4"-\$4,431 6"-\$4,651	12/2018	n/a	\$60,240	Replace 1-4" and 12-6" (13 total) valves on Oro Grande between Calle del Prado and Tejon. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1974 and will be 44 years old in 2018. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main breaks. The valve replacements are not related to new growth. Map V-32 in Exhibit CC-1 shows the location of these valves.

V-33	331	gate valves	16	1-4" 14-6" 1-12"	cast iron with rubberized epoxy coating	4"-\$4,431 6"-\$4,651 12"-\$6,173	Alamosa	12/2018	n/a	\$75,715	Replace 1-4", 14-6", and 1-12" (16 total) valves on Alamosa between Del Cumbre and El Pueblo. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1972 and will be 46 years old in 2018. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-33 in Exhibit CC-1 shows the location of these valves.
V-34	331	gate valves	11	2-4" 9-6"	cast iron with rubberized epoxy coating	4"-\$4,431 6"-\$4,651	Caliente, Yuma Kiva	12/2018	n/a	\$50,719	Replace 2-4" and 9-6" (11 total) valves on Caliente and Yuma Kiva between Tejon and El Pueblo. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1973 and will be 45 years old in 2018. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-34 in Exhibit CC-1 shows the location of these valves.
V-35	331	gate valves	16	15-6" 1-12"	cast iron with rubberized epoxy coating	6"-\$4,651 12"-\$6,173	El Sobrante	12/2018	n/a	\$75,935	Replace 15-6" and 1-12" (16 total) valves on El Sobrante between Baca and Calvaras. Distribution system valves are no longer functioning because they are primarily uncoated butterfly valves which are prone to tuberculation. These valves were installed in 1972 and will be 6 years old in 2018. Replacing the valves decreases time required to shutdown water main in the event of main break or other system maintenance which reduces customer service disruption and decreases water loss during a main break. The valve replacements are not related to new growth. Map V-35 in Exhibit CC-1 shows the location of these valves.
Total			89							\$430,795	

Chaparral City Water Company – PWS ID No. 07-017
SIB PLANT TABLE I, 3-1
2014 Hydrant Replacements

Information to be included with DSIC-Eligible Project Notification

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
H-1	335 Hydrants	hydrants	8	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Palomino	12/2014	n/a	\$18,093	Replace 8 fire hydrants on Palomino between Palisades and Fountain Hills Blvd. The fire hydrants are in deteriorating condition and are approximately 35 years old. These are Dresser hydrants, for which we can no longer obtain repair parts. Three hydrants on this street have already needed replacement within the last 6 years. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-1 in Exhibit CC-1 which shows the locations of the future replacements.
H-2	335 Hydrants	hydrants	10	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Mustang	12/2014	n/a	\$22,616	Replace 10 fire hydrants on Mustang between Palisades and Fountain Hills Blvd. The fire hydrants are in deteriorating condition and are 37 years old. These are Dresser hydrants, for which we can no longer obtain repair parts. One hydrant on this street has already needed replacement within the last 6 years. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-2 in Exhibit CC-1 which shows the locations of the future replacements.

H-3	335	hydrants	1	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Spotted Horse	12/2014	n/a	\$2,262	Replace 1 fire hydrant on Spotted Horse between Mustang and Westridge. The fire hydrant is in deteriorating condition and is 34 years old. This is a Dresser hydrant, for which we can no longer obtain repair parts. Replacing the hydrant will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacement is for existing customers and not related to new growth. See the map for Project H-3 in Exhibit CC-1 which shows the location of the future replacement.
H-4	335	hydrants	1	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Buffalo	12/2014	n/a	\$2,262	Replace 1 fire hydrant on Buffalo between Mustang and Puma. The fire hydrant is in deteriorating condition and is 37 years old. This is a Dresser hydrant, for which we can no longer obtain repair parts. The other 3 hydrants on this street have already needed replacement. Replacing the hydrant will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacement is for existing customers and not related to new growth. See the map for Project H-4 in Exhibit CC-1 which shows the location of the future replacement.
H-5	335	hydrants	10	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Sunburst	12/2014	n/a	\$22,616	Replace 10 fire hydrants on Sunburst between Palisades and Sycamore. The fire hydrants are in deteriorating condition and 2 hydrants on this street have already needed replacement. These are Dresser hydrants, for which we can no longer obtain repair parts. Two hydrants on this street have already needed replacement within the last 6 years. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-5 in Exhibit CC-1 which shows the locations of the future replacements.
H-6	335	hydrants	4	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Burro, Pincushion	12/2014	n/a	\$9,046	Replace 4 fire hydrants on Burro and Pincushion between Palomino and Ocotillo. The fire hydrants are in deteriorating condition and are approximately 37 years old. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-6 in Exhibit CC-1 which shows the locations of the future replacements.
H-7	335	hydrants	7	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Ocotillo	12/2014	n/a	\$15,831	Replace 7 fire hydrants on Ocotillo between Mustang and Fountain Hills Blvd. The fire hydrants are in deteriorating condition and are approximately 39 years old. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-7 in Exhibit CC-1 which shows the locations of the future replacements.
Total			41							\$92,726	

SIB PLANT TABLE I, 3-2**2015 Hydrant Replacements****Information to be included with DSIC-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
H-8	309 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	hydrants	6	n/a	Cast Iron/AVK Wet Barrel	\$2,262	Sycamore	12/2015	n/a	\$13,570	Replace 6 fire hydrants on Sycamore between Thistle and Ocotillo. The fire hydrants are in deteriorating condition and will be 41 years old in 2015. These are Dresser hydrants, for which we can no longer obtain repair parts. One hydrant on this street has already needed replacement within the last 6 years. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-8 in Exhibit CC-1 which shows the locations of the future replacements.
H-9	335	hydrants	6	n/a	Cast Iron/AVK Wet Barrel	\$2,262	Ridgeway	12/2015	n/a	\$13,570	Replace 6 fire hydrants on Ridgeway between Palisades and Winchester. The fire hydrant is in deteriorating condition and will be 39 years old in 2015. These are Dresser hydrants, for which we can no longer obtain repair parts. One hydrant on this street has already needed replacement within the last 6 years. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-9 in Exhibit CC-1 which shows the locations of the future replacements.

H-10	335	hydrants	6	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Greystone	12/2014	n/a	\$13,570	Replace 6 fire hydrants on Greystone between Sunburst and Sycamore. The fire hydrant is in deteriorating condition and will be 29 years old in 2015. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-10 in Exhibit CC-1 which shows the location of the future replacements.
H-11	335	hydrants	4	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Telegraph	12/2014	n/a	\$9,046	Replace 4 fire hydrants on Telegraph between Greystone and Sunburst. The fire hydrant is in deteriorating condition and will be 29 years old in 2015. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-11 in Exhibit CC-1 which shows the location of the future replacements.
H-12	335	hydrants	1	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Tacony	12/2015	n/a	\$2,262	Replace 1 fire hydrant on Tacony between Greystone and Telegraph. The fire hydrant is in deteriorating condition and will be 29 years old in 2015. This is a Dresser hydrant, for which we can no longer obtain repair parts. The other hydrant on this street has already needed replacement. Replacing the hydrant will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacement is for existing customers and not related to new growth. See the map for Project H-12 in Exhibit CC-1 which shows the locations of the future replacement.
H-13	335	hydrants	8	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Mimosa	12/2015	n/a	\$18,093	Replace 8 fire hydrants on Mimosa between Sunflower and Thistle. The fire hydrants are in deteriorating condition and will be approximately 37 years old in 2015. These are Dresser hydrants, for which we can no longer obtain repair parts. One hydrant on this street has already needed replacement. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-13 in Exhibit CC-1 which shows the locations of the future replacements.

H-14	335	hydrants	4	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Cholla	12/2015	n/a	\$9,046	Replace 4 fire hydrants on Cholla between Chicory and Fountain Hills Blvd. The fire hydrants are in deteriorating condition and will be 42 years old in 2015. These are Dresser hydrants, for which we can no longer obtain repair parts. Four hydrants on this street have already needed replacement. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-14 in Exhibit CC-1 which shows the locations of the future replacements.
Total			35							\$79,157	

SIB PLANT TABLE I, 3-3**2016 Hydrant Replacements****Information to be included with DSIC-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
H-15	335 Hydrants	hydrants	2	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Chicory	12/2016	n/a	\$4,523	Replace 2 fire hydrants on Chicory between Sycamore and Thistle. The fire hydrants are in deteriorating condition and will be 41 years old in 2016. These are Dresser hydrants, for which we can no longer obtain repair parts. One hydrant on this street has already needed replacement within the last 6 years. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-15 in Exhibit CC-1 which shows the locations of the future replacements.
H-16	335	hydrants	3	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Verbena	12/2016	n/a	\$6,785	Replace 3 fire hydrants on Verbena between Sage and El Lago. The fire hydrants are in deteriorating condition and will be 40 years old in 2016. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-16 in Exhibit CC-1 which shows the locations of the future replacements.

H-17	335	hydrants	5	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Sage, Stardust	12/2016	n/a	\$11,308	Replace 5 fire hydrants on Sage and Stardust between Palisades and Greystone. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-17 in Exhibit CC-1 which shows the locations of the future replacements.
H-18	335	hydrants	1	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Sierra Norte	12/2016	n/a	\$2,262	Replace 1 fire hydrant on Sierra Norte between Palisades and Sage. This is a Dresser hydrant, for which we can no longer obtain repair parts. Replacing the hydrant will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacement is for existing customers and not related to new growth. See the map for Project H-18 in Exhibit CC-1 which shows the location of the future replacement.
H-19	335	hydrants	3	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Ironwood	12/2016	n/a	\$6,785	Replace 3 fire hydrants on Ironwood between Thistle and Fountain Hills Blvd. The fire hydrants are in deteriorating condition and will be 43 years old in 2016. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-19 in Exhibit CC-1 which shows the location of the future replacements.
H-20	335	hydrants	5	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Thistle	12/2016	n/a	\$11,308	Replace 5 fire hydrants on Thistle between Palisades and Mountainside. The fire hydrants are in deteriorating condition and will be 40 years old in 2016. These are Dresser hydrants, for which we can no longer obtain repair parts. One hydrant on this street has already needed replacement within the last 6 years. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-20 in Exhibit CC-1 which shows the locations of the future replacements.
H-21	335	hydrants	10	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	El Lago	12/2016	n/a	\$22,616	Replace 10 fire hydrants on El Lago between Palisades and Fountain Hills Blvd. The fire hydrants are in deteriorating condition and will be approximately 37 years old in 2016. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-21 in Exhibit CC-1 which shows the locations of the future replacements.

H-22	335	hydrants	1	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Cavern	12/2016	n/a	\$2,262	Replace 1 fire hydrant on Cavern between Palisades and El Lago. The fire hydrant is in deteriorating condition and will be 36 years old in 2016. This is a Dresser hydrant, for which we can no longer obtain repair parts. The other hydrant on this street already needed replacement. Replacing the hydrant will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacement is for existing customers and not related to new growth. See the map for Project H-22 in Exhibit CC-1 which shows the location of the future replacement.
H-23	335	hydrants	4	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Mountain-side	12/2016	n/a	\$9,046	Replace 4 fire hydrants on Mountainside between Palisades and Thistle. The fire hydrants are in deteriorating condition and will be 40 years old in 2016. These are Dresser hydrants, for which we can no longer obtain repair parts. One hydrant on this street has already needed replacement within the last 6 years. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-23 in Exhibit CC-1 which shows the locations of the future replacements.
H-24	335	hydrants	3	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Echo Hill	12/2016	n/a	\$6,785	Replace 3 fire hydrants on Echo Hill between El Lago and Mimosa. The fire hydrants are in deteriorating condition and will be approximately 37 years old in 2016. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-24 in Exhibit CC-1 which shows the locations of the future replacements.
Total			37							\$83,680	

SIB PLANT TABLE I, 3-4**2017 Hydrant Replacements****Information to be included with DSIC-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
H-25	335 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	hydrants	7	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Tumbleweed, Seminole	12/2017	n/a	\$15,831	Replace 7 fire hydrants on Tumbleweed and Seminole between Cavern and Mountainside. The fire hydrants are in deteriorating condition and will be about 40 years old in 2017. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-25 in Exhibit CC-1 which shows the locations of the future replacements.
H-26	335	hydrants	9	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Sunflower, Primrose	12/2017	n/a	\$20,354	Replace 9 fire hydrants on Sunflower and Primrose between Cactus and Mountainside. The fire hydrants are in deteriorating condition and will be about 40 years old in 2017. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-26 in Exhibit CC-1 which shows the locations of the future replacements.

H-27	335	hydrants	4	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Ponderosa	12/2017	n/a	\$9,046	Replace 4 fire hydrants on Ponderosa between Primrose and Mountainside. The fire hydrants are in deteriorating condition and will be about 31 years old in 2017. These are Dresser hydrants, for which we can no longer obtain repair parts. Two hydrants have already needed replacement on this street. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-27 in Exhibit CC-1 which shows the locations of the future replacements.
H-28	335	hydrants	11	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	El Pueblo	12/2017	n/a	\$24,878	Replace 11 fire hydrants on El Pueblo between Fountain Hills Blvd and Escalante. The fire hydrants are in deteriorating condition and will be about 42 years old in 2017. These are Dresser hydrants, for which we can no longer obtain repair parts. Four hydrants have already needed replacement on this street. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-28 in Exhibit CC-1 which shows the locations of the future replacements.
H-29	335	hydrants	6	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Oro Grande	12/2017	n/a	\$13,570	Replace 6 fire hydrants on Ironwood between Calle del Prado and Tejon. The fire hydrants are in deteriorating condition and will be 44 years old in 2017. These are Dresser hydrants, for which we can no longer obtain repair parts. Two hydrants have already needed replacement on this street. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-29 in Exhibit CC-1 which shows the location of the future replacements.
Total			37							\$83,679	

SIB PLANT TABLE I, 3-5**2018 Hydrant Replacements****Information to be included with DSIC-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/ Quantity	Diameter/ Size	Material	Installed Cost/Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
H-30	309 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	hydrants	8	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Alamosa	12/2018	n/a	\$18,093	Replace 8 fire hydrants on Alamosa between Del Cambre and El Pueblo. The fire hydrants are in deteriorating condition and will be about 46 years old in 2018. These are Dresser hydrants, for which we can no longer obtain repair parts. One hydrant on this street already needed replacement. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-30 in Exhibit CC-1 which shows the locations of the future replacements.
H-31	335	hydrants	4	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Caliente, Tejon	12/2018	n/a	\$9,046	Replace 4 fire hydrants on Caliente and Tejon between El Sobrante and El Pueblo. The fire hydrants are in deteriorating condition and will be about 45 years old in 2018. These are Dresser hydrants, for which we can no longer obtain repair parts. Four hydrants on this street have already needed replacement. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-31 in Exhibit CC-1 which shows the locations of the future replacements.

H-32	335	hydrants	6	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	El Sobrante	12/2018	n/a	\$13,570	Replace 6 fire hydrants on El Sobrante between Baca and Calvaras. The fire hydrants are in deteriorating condition and will be about 46 years old in 2018. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-32 in Exhibit CC-1 which shows the locations of the future replacements.
H-33	335	hydrants	13	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Palisades	12/2018	n/a	\$29,401	Replace 13 fire hydrants on Palisades between Sage and Fountain Hills Blvd. The fire hydrants are in deteriorating condition and will be about 40 years old in 2018. These are Dresser hydrants, for which we can no longer obtain repair parts. Three hydrants have already needed replacement on this street. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-33 in Exhibit CC-1 which shows the locations of the future replacements.
H-34	335	hydrants	5	n/a	Cast Iron/ AVK Wet Barrel	\$2,262	Fountain Hills Blvd.	12/2018	n/a	\$11,308	Replace 5 fire hydrants on Fountain Hills Blvd between Palomino and Inca. The fire hydrants are in deteriorating condition and will be 41 years old in 2017. These are Dresser hydrants, for which we can no longer obtain repair parts. Replacing the hydrants will improve fire flow availability and response times in the event of fire at a customer's home or business. The hydrant replacements are for existing customers and not related to new growth. See the map for Project H-34 in Exhibit CC-1 which shows the location of the future replacements.
Total			36							\$81,418	

SIB PLANT TABLE I, 4-1

2014 Meter Replacements

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/ Quantity	Diameter/ Size	Material	Installed Cost/Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
M-1	334	309 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	meters	1,507	3/4" to >2"	Copper/ Plastic 3/4"- \$195 1"- \$234 1 1/2"- \$367 2"- \$447 >2"- \$1,223	Meter Routes 8, 9, and 87 (see map M-1 in Exhibit CC-1)	12/2014	n/a	\$314,989	Replace 1,134 - 3/4", 348 - 1", 16 - 1.5", 6 - 2", and 3 - >2" (1,507 total) meters in CCWC meter routes 8, 9, and 87. The existing meters are between 10 and 15 years old and are experiencing a rapid decline in meter accuracy. Route 8 was chosen for completion in 2014 because the meters are the oldest in the system. Routes 9 and 87 were chosen to complete in the same year due to their vicinity to Route 8. Prior to replacement, a 10% sample of the route meters will be tested for accuracy. The new meters will help reduce system water loss to below 10%. The meter replacements are for existing customers and not related to new growth. See Section 4 of the SIB Report (Exhibit CC-1) for more explanation. See map M-1 in Exhibit CC-1 for the location of the meter routes.
Total				1,507						\$314,989	

2015 Meter Replacements

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/ Quantity	Diameter/ Size	Material	Installed Cost/Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
	309 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants										
M-2	334	meters	1,357	3/4" to >2"	Cooper/ Plastic	3/4"- \$195 1"- \$234 1 1/2"- \$367 2"- \$447 >2"- \$1,223	Meter Routes 63 and 98 (see map M-2 in Exhibit CC-1)	n/a	\$317,509		
	Total		1,357						\$317,509		

SIB PLANT TABLE I, 4-3**Information to be included with SIB-Eligible Project Notification**
2016 Meter Replacements

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)					Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (estimated)		Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
M-3	334	331 T&D Mains 333 Services 334 Meters 335 Hydrants	1,327	3/4" to 2"	Copper/Plastic	3/4"-\$195 1"-\$234 1 1/2"-\$367 2"-\$447	Meter Routes 10, 23, 36, and 68 (see map M-3 in Exhibit CC-1)	12/2016	n/a	\$277,493	Replace 1022 - 3/4", 267 - 1", 24 - 1.5", and 14 - 2" (1,327 total) meters in CCWC meter routes 10, 23, 36, and 68. The existing meters are about 12-13 years old, and will be 15-16 years old in their replacement year. They are experiencing a rapid decline in meter accuracy. Prior to replacement, a 10% sample of the route meters will be tested for accuracy. The new meters will help reduce system water loss to below 10%. The meter replacements are for existing customers and not related to new growth. See Section 4 of the SIB Report (Exhibit CC-1) for more explanation. See map M-3 in Exhibit CC-1 for the location of the meter routes.
Total			1,327							\$277,493	

Chaparral City Water Company – PWS ID No. 07-017
SIB PLANT TABLE I, 4-4
2017 Meter Replacements

Information to be included with SIB-Eligible Project Notification

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)				Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/ Quantity	Diameter/ Size	Material	Installed Cost/Unit (estimated)	Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
M-4	309 Supply Mains 331 T&D Mains 333 Services 334 Meters 335 Hydrants	meters	1,588	¾" to >2"	Copper/ Plastic	¾"- \$195 1"- \$234 1½"- \$367 2"- \$447 >2"- \$1,223	12/2017	n/a	\$328,953	Replace 1,335 - ¾", 215 - 1", 13 - 1.5", 23 - 2", and 2 - >2" (1,588 total) meters in CCWC meter routes 3, 4, 17, and 31. The existing meters are about 11-12 years old, and will be 15-16 years old in their replacement year. They are experiencing a rapid decline in meter accuracy. Prior to replacement, a 10% sample of the route meters will be tested for accuracy. The new meters will help reduce system water loss to below 10%. The meter replacements are for existing customers and not related to new growth. See Section 4 of the SIB Report (Exhibit CC-1) for more explanation. See map M-4 in Exhibit CC-1 for the location of the meter routes.
Total			1,588						\$328,953	

SIB PLANT TABLE I, 4-5**2018 Meter Replacements****Information to be included with SIB-Eligible Project Notification**

Project No.	NARUC Acct No. (DSIC-eligible plant)	Replacement Plant Description (new plant) (DSIC-eligible plant)				Site (location description)	Replacement Plant			1. Provide narrative why Replacement Plant is necessary - replacement of existing plant that has exceeded its designated useful life and has worn out or is in deteriorating condition due to no fault of the utility - replacement of existing plant to address excessive water loss (10% or more) - replacement of existing plant for other reasons supported by persuasive showing by utility 2. Provide narrative explaining why this segment of plant is a priority. 3. Provide narrative explaining how replacing this plant will benefit existing customers. 4. Provide affirmation that Replacement Plant does not include the costs for extending or expanding facilities to serve new customers. 5. Provides reference to related page No. in the submitted detailed Engineering Analysis supporting the need for SIB. Engineering Analysis shall also include narrative explaining the utility's systematic assessment, inspection, maintenance, and repair/replacement program.
		Description	Pipe length/Quantity	Diameter/Size	Material	Installed Cost/Unit (estimated)	Expected In-Service Date	Estimated Subtotal Cost (by NARUC Acct No)	Estimated Subtotal Cost (by project)	
M-5	334	meters	1,418	3/4" to >2"	Copper/ Plastic	3/4"-\$195 1"-\$234 1 1/2"-\$367 2"-\$447 >2"-\$1,223	12/2018	n/a	\$306,835	Replace 930 - 3/4", 448 - 1", 22 - 1.5", 13 - 2", and 5 - >2" (1,418 total) meters in CCWC meter routes 12, 13, 20, 44, and 96. The existing meters are about 11-12 years old, and will be 16-17 years old in their replacement year. They are experiencing a rapid decline in meter accuracy. Prior to replacement, a 10% sample of the route meters will be tested for accuracy. The new meters will help reduce system water loss to below 10%. The meter replacements are for existing customers and not related to new growth. See Section 4 of the SIB Report (Exhibit CC-1) for more explanation. See map M-5 in Exhibit CC-1 for the location of the meter routes.
Total			1,418						\$306,835	

SIB Table II Template

(Exhibit CC-3)

EPCOR Water (USA) Inc.

Chaparral City Water Company/Fountain Hills

PWS ID No. 07-017

December 6, 2013

Water System Name and PWS ID No. 07-017
SIB PLANT TABLE II (Page 1 of 2)

[illegible]

Project No.	Project Description	Estimated Cost (from TABLE I)	Actual Cost	The project cost to be used in calculating the SIB Revenue Requirement shall be the lesser of the actual project cost listed in SIB Plant Table II or 110 percent of the estimated cost listed in SIB Plant Table I as approved in Decision No. _____. Unit costs shall be used if actual units constructed are less than estimated in SIB Plant Table I.
Total Cost				

Chaparral City Water Company
Docket No. W-02113A-13-0118
Test Year Ended December 31, 2012

SIB Schedule A

LINE

NO. CALCULATION OF OVERALL SIB REVENUE REQUIREMENT AND EFFICIENCY CREDIT

1	Total Authorized Revenue Requirement , Per Decision xxxxx, See Attached Schedules	TBD
2	SIB Revenue CAP percentage	5% Per Year
3	SIB Revenue CAP	TBD
4	SIB Eligible Plant - Per SIB Table II, net of retirements	TBD
5	Total Revenue Requirement, (with pro forma SIB investments). See attached revenue requirements schedules as provided by Company.	TBD
6	SIB Revenue Requirement (line 5 minus line 1)	TBD
7	SIB Revenue Requirement Efficiency Credit	5%
8	SIB True-Up Adjustment (from SIB Schedule B)	TBD
9	SIB Authorized Revenue (line 6 plus line 7 plus line 8)	TBD
10	Number of Equivalent Meters, below	TBD
11	Charge per 5/8" meter	TBD

	No. of Customers at Year End	Multipliers	5/8 x 3/4-inch Equivalent Meters	Fixed Surcharge	Annual Rev by Meter Size
5/8 x 3/4-inch	TBD	1	TBD	TBD	TBD
3/4-inch	TBD	1.5	TBD	TBD	TBD
1-inch	TBD	2.5	TBD	TBD	TBD
1 1/2-inch	TBD	5	TBD	TBD	TBD
2-inch	TBD	8	TBD	TBD	TBD
3-inch	TBD	16	TBD	TBD	TBD
4-inch	TBD	25	TBD	TBD	TBD
6-inch	TBD	50	TBD	TBD	TBD
8-inch	TBD	80	TBD	TBD	TBD
10-inch	TBD	115	TBD	TBD	TBD
Totals	TBD		TBD		TBD

Chaparral City Water Company
Docket No. W-02113A-13-0118
Test Year Ended December 31, 2012

SIB Schedule B

	YEARS				
CALCULATION OF SIB TRUE-UP REVENUE REQUIREMENTS ADJUSTMENT	1	2	3	4	5
SIB Authorized Revenue , Per SIB Schedule A	TBD	TBD	TBD	TBD	TBD
Total SIB Surcharges collections for Period	TBD	TBD	TBD	TBD	TBD
SIB True-Up Adjustment	TBD	TBD	TBD	TBD	TBD

Note: The Company shall also provide an analysis of cumulative over or under collections and a net amount to be included in the SIB True-up Adjustment

EXHIBIT 5

Chaparral City Water Company
Docket No. W-02113A-13-0118
Test Year Ended December 31, 2012

SIB Schedule C

TYPICAL BILL IMPACTS 3/4 -Inch Customers

Per Dec. No. XXXXX(no SIB Surcharge)	Step 1			Step 2			Step 3			Step 4			Step 5		
	Total Bill w/ SIB Year 1 *	SIB Inc.	Cumulative % Increase	Total Bill w/ SIB Year 2 *	SIB Inc.	Cumulative % Increase	Total Bill w/ SIB Year 3 *	SIB Inc.	Cumulative % Increase	Total Bill w/ SIB Year 4 *	SIB Inc.	Cumulative % Increase	Total Bill w/ SIB Year 5 *	SIB Inc.	Cumulative % Increase
0	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
1000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
2000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
3000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
4000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
5000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
6000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
7000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
8000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
9000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
10000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
11000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
12000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
13000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
14000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
15000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
20000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
25000	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Median (Cite Usage)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Mean (Cite Usage)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

*: Bills in Years 1 -5 are net of
Efficiency Credit

Chaparral City Water Company
Docket No. W-02113A-13-0118
Test Year Ended December 31, 2012

SIB Schedule D

EARNINGS TEST

Per Dec. No XXXXXX	SIB Step 1	SIB Step 2	SIB Step 3	SIB Step 4	SIB Step 5	Total Pro- forma with SIB
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD

Total Operating Revenue *

Operating Expenses
Operations & Maintenance
Depreciation & Amortization
Taxes Other than Income
Income Taxes

Total Operating Expenses

Operating Income

Rate Base

Rate of Return on Rate Base

Authorized Rate of Return on Rate Base

*: SIB Revenues in Years 1 -5 are net of
5% Efficiency Credit

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP

Chairman

GARY PIERCE

Commissioner

BRENDA BURNS

Commissioner

SUSAN BITTER SMITH

Commissioner

BOB BURNS

Commissioner

IN THE MATTER OF THE APPLICATION OF)
CHAPARRAL CITY WATER COMPANY FOR)
A DETERMINATION OF THE CURRENT FAIR)
VALUE OF ITS UTILITY PLANT AND)
PROPERTY AND FOR INCREASES IN ITS)
RATES AND CHARGES BASED THEREON.)

DOCKET NO. W-02113A-13-0118

DIRECT

TESTIMONY

OF

JOHN A. CASSIDY

PUBLIC UTILITIES ANALYST

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

DECEMBER 18, 2013

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**EXECUTIVE SUMMARY
CHAPARRAL CITY WATER COMPANY
DOCKET NO. W-02113A-13-0118**

The direct testimony of Staff witness John A. Cassidy addresses the following issues:

Capital Structure – Staff recommends that the Commission adopt a hypothetical capital structure for Chaparral City Water Company (“Company”) for this proceeding consisting of 40.0 percent debt and 60.0 percent equity.

Cost of Equity – Staff recommends that the Commission adopt a 9.3 percent return on equity (“ROE”) for the Company. Staff’s estimated ROE for the Company is based on the 8.7 percent average of its discounted cash flow method (“DCF”) cost of equity methodology estimates for the sample companies of 8.1 percent for the constant-growth DCF model and 9.3 percent for the multi-stage DCF model. Staff’s recommended ROE includes an upward economic assessment adjustment of 60 basis points (0.6 percent).

Cost of Debt – Staff recommends that the Commission adopt a 5.9 percent cost of debt for the Company.

Overall Rate of Return – Staff recommends that the Commission adopt a 8.0 percent overall rate of return.

Ms. Ahern’s Testimony – The Commission should reject the Company’s proposed 11.05 percent ROE for the following reasons:

Ms. Ahern’s single-stage constant growth DCF estimates rely exclusively on analysts’ forecasts of earnings per share growth to calculate the dividend growth (g) component. Ms. Ahern overstates the current dividend yield (D_0/P_0) component by using a 60-day average stock price (P_0) value, and she inflates the expected dividend yield (D_1/P_0) component by means of semi-annual compounding. Ms. Ahern’s risk-premium model cost of equity estimates derived from the CAPM, ECAPM and PRPM models are inflated due to the use of a risk-free (R_f) rate calculated as an average of historical measures and forecasted estimates of the 30-year U.S. Treasury yield. Ms. Ahern’s indicated cost of common equity before adjustments for risk is based upon estimates derived from her DCF (8.84 percent), RPM (11.04 percent) and CAPM (10.75 percent) estimation methodologies; however, her 10.48 percent indicated cost of equity exceeds the arithmetic mean of the results obtained from her models and, thus, appears to be overstated. Ms. Ahern’s recommended cost of equity includes an upward 18 basis point credit risk adjustment and an upward 40 basis point business risk adjustment.

I. INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is John A. Cassidy. I am a Public Utilities Analyst employed by the Arizona Corporation Commission ("Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as a Public Utilities Analyst.

A. I am responsible for the examination of financial and statistical information included in utility rate applications and other financial matters, including studies to estimate the cost of capital component in rate filings used to determine the overall revenue requirement, and for preparing written reports, testimonies and schedules to present Staff's recommendations to the Commission on these matters.

Q. Please describe your educational background and professional experience.

A. I hold a Bachelor of Arts degree in History from Arizona State University, a Master of Library Science degree from the University of Arizona, and a Master of Business Administration degree with an emphasis in Finance from Arizona State University. While pursuing my MBA degree, I was inducted into Beta Gamma Sigma, the National Business Honor Society. I have passed the CPA exam, but opted not to pursue certification. I have worked professionally as a librarian, financial consultant and tax auditor and served as Staff's cost of capital witness in rate case evidentiary proceedings in my current as well as in a past tenure as a Commission employee.

Q. What is the scope of your testimony in this case?

A. My testimony provides Staff's recommended capital structure, return on equity ("ROE") and overall rate of return ("ROR") for establishing the revenue requirements for Chaparral

1 City Water Company ("CCWC" or "Company") in the Company's pending water rate
2 application.

3
4 **Q. Please provide a brief description of CCWC.**

5 A. CCWC is an Arizona public service corporation engaged in providing water utility
6 services in portions of Maricopa County, Arizona, pursuant to certificates of convenience
7 and necessity granted by the Arizona Corporation Commission ("Commission"). CCWC
8 is a wholly-owned subsidiary of EPCOR Water (USA) Inc. ("EWUS"). During the test
9 year ending December 31, 2012, the Company served approximately 13,500 water
10 connections.

11
12 *Summary of Testimony and Recommendations*

13 **Q. Briefly summarize how Staff's cost of capital testimony is organized.**

14 A. Staff's cost of capital testimony is presented in ten sections. Section I is this introduction.
15 Section II discusses the concept of weighted average cost of capital ("WACC"). Section
16 III presents the concept of capital structure and presents Staff's recommended capital
17 structure for CCWC in this proceeding. Section IV presents Staff's cost of debt for
18 CCWC. Section V discusses the concepts of ROE and risk. Section VI presents the
19 methods employed by Staff to estimate CCWC's ROE. Section VII presents the findings
20 of Staff's ROE analysis. Section VIII presents Staff's final cost of equity estimates for
21 CCWC. Section IX presents Staff's ROR recommendation. Finally, Section X presents
22 Staff's comments on the direct testimony of the Company's witness, Ms. Pauline M.
23 Ahern.

1 **Q. Have you prepared any exhibits to accompany your testimony?**

2 A. Yes. I prepared nine schedules (JAC-1 to JAC-9) which support Staff's cost of capital
3 analysis. Additionally, Staff has included one exhibit (JAC-A).

4
5 **Q. What is Staff's recommended rate of return for CCWC?**

6 A. Staff recommends an 8.0 percent overall ROR, as shown in Schedule JAC-1. Staff's ROR
7 recommendation is based on the following: (1) a hypothetical capital structure composed
8 of 40.0 percent debt and 60.0 percent equity; (2) a cost of equity of 9.3 percent, calculated
9 as the simple average of the two cost of equity estimates for the sample companies derived
10 from Staff's discounted cash flow ("DCF") estimation methodologies (8.1 percent from
11 Staff's constant growth DCF model and 9.3 percent from Staff's multi-stage DCF model),
12 plus the adoption of a 60 basis point upward economic assessment adjustment; and (3) a
13 cost of debt of 5.9 percent.

14
15 Staff continues to develop and analyze the indicated cost of equity estimates derived from
16 the two capital asset pricing model ("CAPM") estimation methodologies historically
17 considered and relied upon by Staff. However, at the present time Staff is recommending
18 that the Commission de-emphasize the CAPM driven results due to the continuing
19 divergence of the CAPM-indicated cost of equity results relative to those derived by the
20 DCF model.

21
22 **Q. Mr. Cassidy, briefly explain why the cost of equity estimates derived from the CAPM**
23 **have become problematic in today's economic environment.**

24 A. In an effort to recover from the economic recession of 2008, the United States Federal
25 Reserve ("The Fed") initiated a monetary policy intended to stimulate economic growth
26 and reduce unemployment by keeping the federal funds rate at a level between 0 to ¼

1 percent.¹ The federal funds rate is the central bank's key tool to spur the economy and a
2 low rate is thought to encourage spending by making it cheaper to borrow money on a
3 short-term basis. In addition, in an effort to put downward pressure on longer-term
4 interest rates, the Fed initiated a policy of quantitative easing² wherein the U.S. central
5 bank would purchase agency mortgage-backed securities by reinvesting the principal
6 payments from its holdings of agency debt and agency mortgage-backed securities, and of
7 rolling over maturing Treasury securities at auction.³ As a consequence, the low interest
8 rate environment engineered by the Fed has compelled investors to seek out higher yields
9 on investment wherever they may be found, resulting in the equity markets having
10 recently achieved new all-time highs⁴ and forecasted dividend yields falling to new lows.⁵
11 At present, these factors, in combination with one another, have led to abnormally low
12 cost of equity estimates being obtained from the CAPM model. Accordingly, in Staff's
13 judgment the cost of equity estimates derived from the CAPM should not be given their
14 traditional weighting for purposes of setting rates until such time that market conditions
15 change.
16

¹ The federal funds rate is the interest rate charged to banks by the Fed for overnight transfers of funds.

² Quantitative easing is an unconventional monetary policy in which a central bank purchases government securities or other securities from the market in order to lower interest rates and increase the money supply. Quantitative easing increases the money supply by flooding financial institutions with capital in an effort to promote increased lending and liquidity. Quantitative easing is considered when short-term interest rates are at or approaching zero, and does not involve the printing of new banknotes.

³ At present, the Fed purchases \$40 billion of agency mortgage-backed securities per month and \$45 billion of longer-term Treasury securities per month. (<http://www.federalreserve.gov/newsevents/press/monetary/20131030a.htm>)

⁴ The Dow Jones Industrial Average closed above 16,000 for the first time ever on November 27, 2013 (16,097.33), and reached an all-time intra-day high of 16,174.51 on November 29, 2013. Similarly, the S&P 500 Index reached a new all-time closing high of 1,808.37 on December 9, 2013.

⁵ As reported in the *Value Line Investment Survey, Summary & Index*, the median estimated dividend yield (next 12 months) of all dividend paying stocks under its review fell to 2.0 percent on November 1, 2013, and continues to remain at that level (i.e. through the most recent December 13, 2013 issue).

1 *CCWC's Proposed Overall Rate of Return*

2 **Q. Briefly summarize CCWC's proposed capital structure, cost of debt, ROE and**
3 **overall ROR for this proceeding.**

4 A. Table 1 summarizes the Company's proposed capital structure, cost of debt, ROE and
5 overall ROR in this proceeding:

7 **Table 1**

	Weight	Cost	Weighted Cost
Long-term Debt	16.60%	5.97%	0.99%
Common Equity	83.40%	11.05%	<u>9.22%</u>
Cost of Capital/ROR			10.21%

8
9 CCWC is proposing an overall rate of return of 10.21 percent.⁶

10
11 **II. THE WEIGHTED AVERAGE COST OF CAPITAL**

12 **Q. Briefly explain the cost of capital concept.**

13 A. The cost of capital is the opportunity cost of choosing one investment over others with
14 equivalent risk. In other words, the cost of capital is the return that stakeholders expect
15 for investing their financial resources in a determined business venture over another
16 business venture.

17
18 **Q. What is the overall cost of capital?**

19 A. The cost of capital to a company issuing a variety of securities (i.e., stock and
20 indebtedness) is an average of the cost rates on all issued securities adjusted to reflect the

⁶ CCWC's proposed 10.21 percent ROR is calculated based upon the Company's projected year-end capital structure rather than CCWC's actual December 31, 2012 test-year end capital structure (*See* Company Schedule D-1).

1 relative amounts for each security in the company's entire capital structure. Thus, the
2 overall cost of capital is the WACC.

3
4 **Q. How is the WACC calculated?**

5 A. The WACC is calculated by adding the weighted expected returns of a firm's securities.
6 The WACC formula is:

7 Equation 1.

8
9
$$\text{WACC} = \sum_{i=1}^n W_i * r_i$$

10

11 In this equation, W_i is the weight given to the i^{th} security (the proportion of the i^{th} security
12 relative to the portfolio) and r_i is the expected return on the i^{th} security.

13
14 **Q. Can you provide an example demonstrating application of Equation 1?**

15 A. Yes. For this example, assume that an entity has a capital structure composed of 60
16 percent debt and 40 percent equity. Also, assume that the embedded cost of debt is 6.0
17 percent and the expected return on equity, i.e., the cost of equity, is 10.5 percent.
18 Calculation of the WACC is as follows:

19
$$\text{WACC} = (60\% * 6.0\%) + (40\% * 10.5\%)$$

20
$$\text{WACC} = 3.60\% + 4.20\%$$

21
$$\text{WACC} = 7.80\%$$

22

23 The weighted average cost of capital in this example is 7.80 percent. The entity in this
24 example would need to earn an overall rate of return of 7.80 percent to cover its cost of
25 capital.
26

III. CAPITAL STRUCTURE

Background

Q. Please explain the capital structure concept.

A. The capital structure of a firm is the relative proportions of each type of security--short-term debt, long-term debt (including capital leases), preferred stock and common stock--that are used to finance the firm's assets.

Q. How is the capital structure expressed?

A. The capital structure of a company is expressed as the percentage of each component of the capital structure (capital leases, short-term debt, long-term debt, preferred stock and common stock) relative to the entire capital structure.

As an example, the capital structure for an entity that is financed by \$20,000 of short-term debt, \$85,000 of long-term debt (including capital leases), \$15,000 of preferred stock and \$80,000 of common stock is shown in Table 2.

Table 2

Component			%
Short-Term Debt	\$20,000	$(\$20,000/\$200,000)$	10.0%
Long-Term Debt	\$85,000	$(\$85,000/\$200,000)$	42.5%
Preferred Stock	\$15,000	$(\$15,000/\$200,000)$	7.5%
Common Stock	\$80,000	$(\$80,000/\$200,000)$	40.0%
Total	\$200,000		100%

The capital structure in this example is composed of 10.0 percent short-term debt, 42.5 percent long-term debt, 7.5 percent preferred stock and 40.0 percent common stock.

1 *CCWC's Capital Structure*

2 **Q. What capital structure does CCWC propose?**

3 A. The Company proposes a capital structure composed of 16.60 percent debt and 83.40
4 percent common equity. CCWC's proposed capital structure is based upon the
5 Company's August 31, 2013 projected capital structure⁷, not CCWC's actual capital
6 structure as of the test year ending December 31, 2012.

7
8 **Q. How does CCWC's proposed capital structure compare to the capital structures of
9 publicly-traded water utilities?**

10 A. Schedule JAC-4 shows the capital structures of seven publicly-traded water companies
11 ("sample water companies" or "sample water utilities") as of December 2012. The
12 average capital structure for the sample water utilities is comprised of approximately 50.3
13 percent debt and 49.7 percent equity.

14
15 *Staff's Capital Structure*

16 **Q. What is Staff's recommended capital structure for CCWC?**

17 A. Staff recommends a hypothetical capital structure composed of 40.0 percent debt and 60.0
18 percent equity. Staff's recommended hypothetical capital structure gives recognition to
19 the Company's actual cost of long-term debt as of the December 31, 2012, test-year end,
20 but excludes the cost associated with the \$135,057 of short-term debt.⁸

21

⁷ See Ahern Direct, p. 5, lines 2-3.

⁸ As reported in Company Schedule D-2, this \$135,057 short-term debt obligation represented an intercompany payable having a cost of 0.72%. Staff elected to exclude this cost, for as shown in Company Schedule D-1 the \$135,057 short-term debt obligation was to be paid off prior to August 31, 2013, as it is not reported as a component of the cost of debt in the Company's projected capital structure.

1 **Q. What is the Company's December 31, 2012, test-year end capital structure, exclusive**
2 **of the above referenced \$135,057 short-term debt?**

3 A. As shown in Schedule D-1, as of December 31, 2012, CCWC's capital structure consisted
4 of \$4,935,000 of long-term debt (17.68%), \$135,057 of short-term debt (0.48%), and
5 \$22,837,590 of stockholders' equity (81.83%). Thus, exclusive of the short-term debt
6 component, CCWC's actual December 31, 2012, test-year end capital structure consisted
7 of 17.8 percent debt (\$4,935,000) and 82.2 percent equity (\$22,837,590).

8
9 **Q. Why is Staff recommending adoption of a hypothetical capital structure for CCWC**
10 **in this proceeding rather than the Company's actual test-year end capital structure?**

11 A. Staff recommends a hypothetical capital structure of 40.0 percent debt and 60.0 percent
12 equity to give recognition to CCWC's reduced exposure to financial risk relative to Staff's
13 proxy group of companies. As noted earlier, the sample average capital structure consists
14 of 50.3 percent debt and 49.7 percent equity, whereas CCWC's December 31, 2012, test-
15 year end capital structure is equity-rich, consisting of 17.8 percent debt and 82.2 percent
16 equity. Therefore, because Staff's proxy group of companies is more highly leveraged
17 than CCWC (i.e. the debt component in the capital structure is higher), CCWC has *less*
18 exposure to financial risk than do the sample companies and, thus, a lower cost of equity.
19 Staff's hypothetical 40.0 percent debt and 60.0 percent equity capital structure gives
20 recognition to this circumstance, and encourages CCWC to move towards a more
21 balanced capital structure going forward.

22
23 **Q. Why is it beneficial for a regulated public utility to have a balanced capital**
24 **structure?**

25 A. Regulated public utilities are capital intensive, requiring significant investments of both
26 debt and equity capital to fund a regulated entity's assets and rate base. Furthermore,

1 because the cost of debt capital is less than the cost of equity capital, the capital budgeting
2 decision becomes an important managerial consideration, as the regulatory compact
3 allows for regulated public utilities to recover, in rates, the cost of providing service to
4 ratepayers. Accordingly, a capital structure composed of a disproportionately high level
5 of equity capital will result in higher rates being charged to customers, whereas a more
6 balanced capital structure will allow a regulated utility to provide the same level of service
7 to customers but at a lower overall cost to ratepayers. Conversely, a capital structure
8 composed of a disproportionately high level of debt capital should be avoided, as it
9 subjects a utility to greater exposure to financial risk. For a Class "A" utility such as
10 CWCC, Staff considers a balanced, economic capital structure to be one in which the debt
11 component lies within a range of 40 percent to 60 percent.

12
13 **IV. COST OF DEBT**

14 **Q. What is the cost of debt proposed by the Company in this proceeding?**

15 A. As shown in Company Schedule D-1, CCWC proposes a cost of debt of 5.97 percent.

16
17 **Q. Isn't it true that subsequent to filing its rate application, CCWC also filed a**
18 **financing application, and if so, what is the current status of the Company's**
19 **financing application?**

20 A. Yes, the Company filed a financing application⁹ seeking authority to refinance all of its
21 current \$4.935 million of IDA bond debt with \$4.935 million of replacement debt to be
22 made available through the Company's ultimate parent, EPCOR. After review of the
23 Company's initial proposed refinancing, Staff determined that it would not recommend
24 approval of the Company's proposed refinancing, and communicated this determination to
25 the Company.

⁹ Docket No. W-02113A-13-0047, dated March 1, 2013.

1 **Q. Did the Company recently amend its financing application?**

2 A. Yes. CCWC filed an amendment to its financing application with the Commission on
3 November 22, 2013. In the amended filing, the Company proposes new lending terms,
4 and has requested that approval of the financing be expedited and that the financing
5 docket *not* be consolidated with the rate docket.

6
7 **Q. Is Staff currently in a position to express a recommendation on the Company's**
8 **amended refinancing proposal?**

9 A. No. The Company's amended filing has not been fully analyzed, and at this juncture Staff
10 will need to obtain additional information from CCWC before making that determination.

11
12 **Q. In light of the above, what cost of debt does Staff recommend for CCWC in this**
13 **proceeding?**

14 A. Staff recommends a cost of debt of 5.9 percent. Staff's recommended cost of debt is
15 reflective of the cost of CCWC's existing IDA long-term debt, and not the replacement
16 debt proposed by the Company in its amended financing application. Staff intends to
17 issue new data requests to the Company relating to CCWC's amended filing, and will be
18 prepared to respond to the Company's amended financing proposal and to the issue of
19 consolidation when filing Staff's surrebuttal testimony.

20
21 **V. RETURN ON EQUITY**

22 *Background*

23 **Q. Please define the term "cost of equity capital."**

24 A. The cost of equity is the rate of return that investors expect to earn on their investment in a
25 business entity given its risk. In other words, the cost of equity to the entity is the
26 investors' expected rate of return on other investments of similar risk. As investors have a

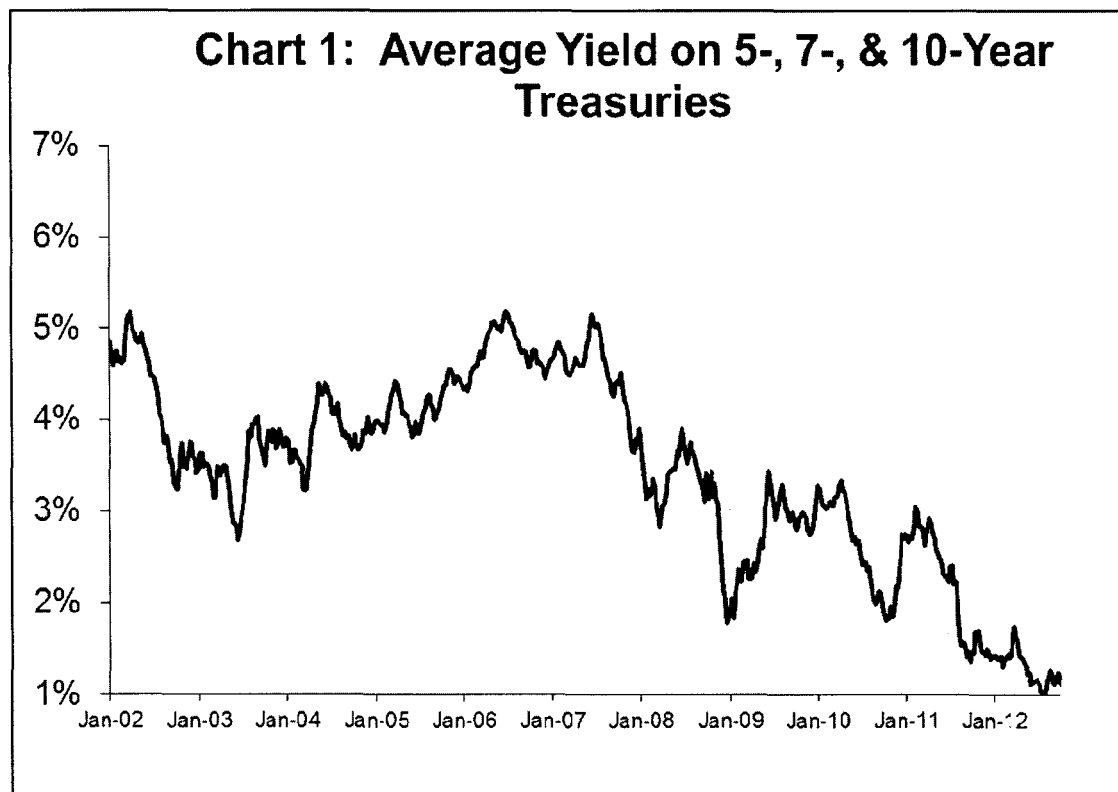
1 wide selection of stocks to choose from, they will choose stocks with similar risks but
2 higher returns. Therefore, the market determines the entity's cost of equity.

3
4 **Q. Is there a correlation between interest rates and the cost of equity?**

5 A. Yes, there is a positive correlation between interest rates and the cost of equity, as the two
6 tend to move in the same direction.

7
8 **Q. What has been the general trend of interest rates in recent years?**

9 A. A chronological chart of interest rates is a good tool to show interest rate history and
10 identify trends. Chart 1 graphs intermediate U.S. treasury rates from January 4, 2002, to
11 May 31, 2013.



As shown in Chart 1, intermediate-term interest rates trended downward from 2002 to mid-2003, trended upward through mid-2007, and have generally trended downward since that time.

Q. What has been the general trend in interest rates longer term?

A. U.S. Treasury rates from January 1962- May 2013 are shown in Chart 2. The chart shows that interest rates trended upward through the mid-1980s and have trended downward since that time.



Source: Federal Reserve

1 **Q. Do these trends have relevance to the cost of equity?**

2 A. Yes. As previously noted, interest rates and the cost of equity tend to move in the same
3 direction; therefore, it can be concluded that the cost of equity has also declined over the
4 past 25 years.

5
6 **Q. Do actual returns represent the cost of equity?**

7 A. No. The cost of equity represents investors' *expected* returns and not realized returns.
8

9 *Risk*

10 **Q. Please define risk in relation to cost of capital.**

11 A. Risk, as it relates to an investment, is the variability or uncertainty of the returns on a
12 particular security. Investors are risk averse and require a greater potential return to invest
13 in relatively greater risk opportunities, i.e., investors require compensation for taking
14 on additional risk. Risk is generally separated into two components. Those components
15 are market risk (systematic risk) and non-market risk (diversifiable risk or firm-specific
16 risk).
17

18 **Q. What is market risk?**

19 A. Market risk, or systematic risk, is the risk associated with an investment that cannot be
20 reduced through diversification. Market risk stems from factors that affect all securities,
21 such as recessions, war, inflation and high interest rates. These factors affect the entire
22 market. However, market risk does not impact each security to the same degree.
23

24 **Q. Please define business risk.**

25 A. Business risk is the fluctuation of earnings inherent in a firm's operations and
26 environment, such as competition and adverse economic conditions, which may impair its

1 ability to provide returns on investment. Companies in the same or similar line of
2 business tend to experience the same fluctuations in business cycles.

3
4 **Q. Please define financial risk.**

5 A. Financial risk is the fluctuation of earnings inherent in the use of debt financing that may
6 impair a firm's ability to provide adequate returns; the higher the percentage of debt in a
7 company's capital structure, the greater its exposure to financial risk.

8
9 **Q. Do business risk and financial risk affect the cost of equity?**

10 A. Yes.

11
12 **Q. Is a firm subject to any other risk?**

13 A. Yes. Firms are also subject to unsystematic or firm-specific risk. Examples of
14 unsystematic risk include losses caused by labor problems, nationalization of assets, loss
15 of a big client or weather conditions. However, investors can eliminate firm-specific risk
16 by holding a diverse portfolio; thus, it is not of concern to diversified investors.

17
18 **Q. How does CCWC's financial risk exposure compare to that of Staff's sample group
19 of water companies?**

20 A. JAC-4 shows the capital structures of the seven sample water companies as of December
21 2012, and CCWC's capital structure as of the test year ending December 31, 2012. As
22 shown, the sample water utilities were capitalized with approximately 50.3 percent debt
23 and 49.7 percent equity, while CCWC's capital structure consists of 17.8 percent debt and
24 82.2 percent equity. Thus, compared to Staff's sample companies, CCWC has
25 significantly less exposure to financial risk.

26

1 **Q. Is the cost of equity affected by firm-specific risk?**

2 A. No. Since firm-specific risk can be eliminated through diversification, it does not affect
3 the cost of equity.
4

5 **Q. Can investors expect additional returns for firm-specific risk?**

6 A. No. Investors who hold diversified portfolios can effectively eliminate firm-specific risk
7 and, consequently, do not require any additional return. Since investors who choose to be
8 less than fully-diversified must compete in the market with fully-diversified investors, the
9 former cannot expect to be compensated for unique risk.
10

11 **VI. ESTIMATING THE COST OF EQUITY**

12 *Introduction*

13 **Q. Did Staff directly estimate the cost of equity for CCWC?**

14 A. No. Since CCWC is not a publicly-traded company, Staff is unable to directly estimate its
15 cost of equity due to the lack of firm-specific market data. Instead, Staff estimated the
16 Company's cost of equity indirectly, using a representative sample group of publicly-
17 traded water utilities as a proxy, taking the average of the sample group to reduce the
18 sample error resulting from random fluctuations in the market at the time the information
19 is gathered.
20

21 **Q. What sample companies did Staff select as proxies for CCWC?**

22 A. Staff's sample consists of the following seven publicly-traded water utilities: American
23 States Water, California Water, Aqua America, Connecticut Water Service, Middlesex
24 Water, SJW Corporation and York Water. Staff selected these companies because they
25 are publicly-traded and receive the majority of their earnings from regulated operations.
26

1 **Q. What models did Staff implement to estimate CCWC's cost of equity?**

2 A. Staff used two variations of the DCF model, both of which are market-based, to estimate
3 the cost of equity for CCWC: the constant-growth DCF model and the multi-stage DCF
4 model.

5
6 **Q. Please explain why Staff chose the DCF model.**

7 A. Staff chose to use the DCF model because it is a widely-recognized market-based model
8 and has been used extensively to estimate the cost of equity. For the reasons noted earlier,
9 Staff has not incorporated estimates derived from the CAPM into its cost of equity
10 analysis for CCWC. An explanation of the DCF model is provided below.

11
12 *Discounted Cash Flow Model Analysis*

13 **Q. Please provide a brief summary of the theory upon which the DCF method of**
14 **estimating the cost of equity is based.**

15 A. The DCF method of stock valuation is based on the theory that the value of an investment
16 is equal to the sum of the future cash flows generated from the aforementioned investment
17 discounted to the present time. This method uses expected dividends, market price and
18 dividend growth rate to calculate the cost of capital. Professor Myron Gordon pioneered
19 the DCF method in the 1960s. The DCF method has become widely used to estimate the
20 cost of equity for public utilities due to its theoretical merit and its simplicity. Staff used
21 the financial information for the relevant seven sample companies in the DCF model and
22 averaged the results to determine an estimated cost of equity for the sample companies.

23
24 **Q. Does Staff use more than one version of the DCF?**

25 A. Yes. Staff uses two versions of the DCF model: the constant-growth DCF and the multi-
26 stage or non-constant growth DCF. The constant-growth DCF assumes that an entity's

dividends will grow indefinitely at the same rate. The multi-stage growth DCF model assumes the dividend growth rate will change at some point in the future.

The Constant-Growth DCF

Q. What is the mathematical formula used in Staff's constant-growth DCF analysis?

A. The constant-growth DCF formula used in Staff's analysis is:

Equation 2 :

$$K = \frac{D_1}{P_0} + g$$

where : K = the cost of equity

D_1 = the expected annual dividend

P_0 = the current stock price

g = the expected infinite annual growth rate of dividends

Equation 2 assumes that the entity has a constant earnings retention rate and that its earnings are expected to grow at a constant rate. According to Equation 2, a stock with a current market price of \$10 per share, an expected annual dividend of \$0.45 per share and an expected dividend growth rate of 3.0 percent per year has a cost of equity to the entity of 7.5 percent reflected by the sum of the dividend yield ($\$0.45 / \$10 = 4.5$ percent) and the 3.0 percent annual dividend growth rate.

Q. How did Staff calculate the expected dividend yield (D_1/P_0) component of the constant-growth DCF formula?

A. Staff calculated the expected yield component of the DCF formula by dividing the expected annual dividend (D_1) by the spot stock price (P_0) after the close of market on October 23, 2013, as reported by *MSN Money*.

1 **Q. Why did Staff use the October 23, 2013, spot price rather than a historical average**
2 **stock price to calculate the dividend yield component of the DCF formula?**

3 A. The current, rather than historic, market price is used in order to be consistent with
4 financial theory. In accordance with the Efficient Market Hypothesis, the current stock
5 price is reflective of all available information on a stock, and as such reveals investors'
6 expectations of future returns.

7
8 **Q. How did Staff estimate the dividend growth (g) component of the constant-growth**
9 **DCF model represented by Equation 2?**

10 A. The dividend growth component used by Staff is determined by the average of six
11 different estimation methods, as shown in Schedule JAC-8. Staff calculated historical and
12 projected growth estimates on dividend-per-share ("DPS"),¹⁰ earnings-per-share ("EPS")¹¹
13 and sustainable growth bases.

14
15 **Q. Why did Staff examine EPS growth to estimate the dividend growth component of**
16 **the constant-growth DCF model?**

17 A. Historic and projected EPS growth are used because dividends are related to earnings.
18 Dividend distributions may exceed earnings in the short run, but cannot continue
19 indefinitely. In the long term, dividend distributions are dependent on earnings.

20
21 **Q. How did Staff estimate historical DPS growth?**

22 A. Staff estimated historical DPS growth by calculating a compound annual DPS growth rate
23 for each of its sample companies over the 10-year period, 2002-2012. As shown in
24 Schedule JAC-5, the average historical DPS growth rate for the sample was 3.6 percent.

25

¹⁰ Derived from information provided by *Value Line*.

¹¹ Derived from information provided by *Value Line*.

1 **Q. How did Staff estimate projected DPS growth?**

2 A. Staff calculated an average of the projected DPS growth rates for the sample water utilities
3 from *Value Line* through the period, 2016-2018. The average projected DPS growth rate
4 is 5.5 percent, as shown in Schedule JAC-5.

5
6 **Q. How did Staff estimate historical EPS growth rate?**

7 A. Staff estimated historical EPS growth by calculating a compound annual EPS growth rate
8 for each of its sample companies over the 10-year period, 2002-2012. As shown in
9 Schedule JAC-5, the average historical EPS growth rate for the sample was 5.1 percent.

10
11 **Q. How did Staff estimate projected EPS growth?**

12 A. Staff calculated an average of the projected EPS growth rates for the sample water utilities
13 from *Value Line* through the period, 2016-2018. The average projected EPS growth rate
14 is 5.6 percent, as shown in Schedule JAC-5.

15
16 **Q. How does Staff calculate its historical and projected sustainable growth rates?**

17 A. Historical and projected sustainable growth rates are calculated by adding their respective
18 retention growth rate terms (br) to their respective stock financing growth rate terms (vs),
19 as shown in Schedule JAC-6.

20
21 **Q. What is retention growth?**

22 A. Retention growth is the growth in dividends due to the retention of earnings. The
23 retention growth concept is based on the theory that dividend growth cannot be achieved
24 unless the company retains and reinvests a portion of its earnings. The retention growth is
25 used in Staff's calculation of sustainable growth shown in Schedule JAC-6.

26

1 **Q. What is the formula for the retention growth rate?**

2 A. The retention growth rate is the product of the retention ratio and the book/accounting
3 return on equity. The retention growth rate formula is:

4

5

Equation 3 :

$$\text{Retention Growth Rate} = br$$

where : b = the retention ratio (1 – dividend payout ratio)

r = the accounting/book return on common equity

6

7 **Q. How did Staff calculate the average historical retention growth rate (br) for the**
8 **sample water utilities?**

9 A. Staff calculated the mean of the 10-year average historical retention rate for each sample
10 company over the period, 2002-2012. As shown in Schedule JAC-6, the historical
11 average retention (br) growth rate for the sample is 2.7 percent.

12

13 **Q. How did Staff estimate its projected retention growth rate (br) for the sample water**
14 **utilities?**

15 A. Staff used the retention growth projections for the sample water utilities for the period,
16 2016-2018, from *Value Line*. As shown in Schedule JAC-6, the projected average
17 retention growth rate for the sample companies is 3.8 percent.

18

19 **Q. When can retention growth provide a reasonable estimate of future dividend**
20 **growth?**

21 A. The retention growth rate is a reasonable estimate of future dividend growth when the
22 retention ratio is reasonably constant and the entity's market price to book value ("market-

1 to-book ratio”) is expected to be 1.0. The average retention ratio has been reasonably
2 constant in recent years. However, the market-to-book ratio for the sample water utilities
3 is 2.3, notably higher than 1.0, as shown in Schedule JAC-7.
4

5 **Q. Is there any financial implication of a market-to-book ratio greater than 1.0?**

6 A. Yes. A market-to-book ratio greater than 1.0 implies that investors expect an entity to
7 earn an accounting/book return on its equity that exceeds its cost of equity. The
8 relationship between required returns and expected cash flows is readily observed in the
9 fixed securities market. For example, assume an entity contemplating issuance of bonds
10 with a face value of \$10 million at either 6 percent or 8 percent and, thus, paying annual
11 interest of \$600,000 or \$800,000, respectively. Regardless of investors’ required return on
12 similar bonds, investors will be willing to pay more for the bonds if issued at 8 percent
13 than if the bonds are issued at 6 percent. For example, if the current interest rate required
14 by investors is 6 percent, then they would bid \$10 million for the 6 percent bonds and
15 more than \$10 million for the 8 percent bonds. Similarly, if equity investors require a 9
16 percent return and expect an entity to earn accounting/book returns of 13 percent, the
17 market will bid up the price of the entity’s stock to provide the required return of 9
18 percent.
19

20 **Q. How has Staff generally recognized a market-to-book ratio exceeding 1.0 in its cost of**
21 **equity analyses in recent years?**

22 A. Staff has assumed that investors expect the market-to-book ratio to remain greater than
23 1.0. Given that assumption, Staff has added a stock financing growth rate (vs) term to the
24 retention ratio (br) term to calculate its historical and projected sustainable growth rates.
25

1 Q. Do the historical and projected sustainable growth rates Staff uses to develop its
2 DCF cost of equity in this case continue to include a stock financing growth rate
3 term?

4 A. Yes.

5
6 Q. What is stock financing growth?

7 A. Stock financing growth is the increase in an entity's dividends attributable to the sale of
8 stock by that entity. Stock financing growth is a concept derived by Myron Gordon and
9 discussed in his book *The Cost of Capital to a Public Utility*.¹² Stock financing growth is
10 the product of the fraction of the funds raised from the sale of stock that accrues to
11 existing shareholders (v) and the fraction resulting from dividing the funds raised from the
12 sale of stock by the existing common equity (s).

13
14 Q. What is the mathematical formula for the stock financing growth rate?

15 A. The mathematical formula for stock financing growth is:

Equation 4:

$$\text{Stock Financing Growth} = vs$$

where: v = Fraction of the funds raised from the sale of stock that accrues
to existing shareholders

s = Funds raised from the sale of stock as a fraction of the existing
common equity

16
17 Q. How is the variable v presented above calculated?

18 A. Variable v is calculated as follows:

¹² Gordon, Myron J. *The Cost of Capital to a Public Utility*. MSU Public Utilities Studies, Michigan, 1974. pp 31-35.

Equation 5:

$$v = 1 - \left(\frac{\text{book value}}{\text{market value}} \right)$$

For example, assume that a share of stock has a \$30 book value and is selling for \$45.

Then, to find the value of v , the formula is applied:

$$v = 1 - \left(\frac{30}{45} \right)$$

In this example, v is equal to 0.33.

Q. How is the variable s presented above calculated?

A. Variable s is calculated as follows:

Equation 6:

$$s = \frac{\text{Funds raised from the issuance of stock}}{\text{Total existing common equity before the issuance}}$$

For example, assume that an entity has \$150 in existing equity, and it sells \$30 of stock.

Then, to find the value of s , the formula is applied:

$$s = \left(\frac{30}{150} \right)$$

In this example, s is equal to 20.0 percent.

Q. What is the vs term when the market-to-book ratio is equal to 1.0?

A. A market-to-book ratio of 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment equal to the cost of equity. When the

1 market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the
2 entity accrues to the benefit of existing shareholders, i.e., the term v is equal to zero (0.0).
3 Consequently, the vs term is also equal to zero (0.0). When stock financing growth is
4 zero, dividend growth depends solely on the br term.

5
6 **Q. What is the effect of the vs term when the market-to-book ratio is greater than 1.0?**

7 A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a
8 book/accounting return on their equity investment greater than the cost of equity.
9 Equation 5 shows that, when the market-to-book ratio is greater than 1.0, the v term is also
10 greater than zero. The excess by which new shares are issued and sold over book value
11 per share of outstanding stock is a contribution that accrues to existing stockholders in the
12 form of a higher book value. The resulting higher book value leads to higher expected
13 earnings and dividends. Continued growth from the vs term is dependent upon the
14 continued issuance and sale of additional shares at a price that exceeds book value per
15 share.

16
17 **Q. What vs estimate did Staff calculate from its analysis of the sample water utilities?**

18 A. Staff estimated an average stock financing growth of 2.4 percent for the sample water
19 utilities, as shown in Schedule JAC-6.

20
21 **Q. What would occur if an entity had a market-to-book ratio greater than 1.0 as a result
22 of investors expecting earnings to exceed its cost of equity, and subsequently
23 experienced newly-authorized rates equal only to its cost of equity?**

24 A. Holding all other factors constant, one would expect market forces to move the company's
25 stock price lower, closer to a market-to-book ratio of 1.0, to reflect investor expectations
26 of reduced expected future cash flows.

1 **Q. If the average market-to-book ratio of Staff's sample water utilities were to fall to 1.0**
2 **due to authorized ROEs equaling their cost of equity, would inclusion of the *vs* term**
3 **be necessary to Staff's constant-growth DCF analysis?**

4 A. No. As discussed above, when the market-to-book ratio is equal to 1.0, none of the funds
5 raised from the sale of stock by the entity accrues to the benefit of existing shareholders
6 because the *v* term equals to zero and, consequently, the *vs* term also equals zero. When
7 the market-to-book ratio equals 1.0, dividend growth depends solely on the *br* term.
8 Staff's inclusion of the *vs* term assumes that the market-to-book ratio continues to exceed
9 1.0 and that the water utilities will continue to issue and sell stock at prices above book
10 value with the effect of benefitting existing shareholders.

11
12 **Q. What are Staff's historical and projected sustainable growth rates?**

13 A. Staff's estimated historical sustainable growth rate is 5.1 percent based on an analysis of
14 earnings retention for the sample water companies. Staff's projected sustainable growth
15 rate is 6.2 percent based on retention growth projected by *Value Line*. Schedule JAC-6
16 presents Staff's estimates of the sustainable growth rate.

17
18 **Q. What is Staff's expected infinite annual growth rate in dividends?**

19 A. Staff's expected dividend growth rate (*g*) is 5.2 percent, which is the average of historical
20 and projected DPS, EPS, and sustainable growth estimates. Staff's calculation of the
21 expected infinite annual growth rate in dividends is shown in Schedule JAC-8.

22
23 **Q. What is Staff's constant-growth DCF estimate for the sample utilities?**

24 A. Staff's constant-growth DCF estimate is 8.1 percent, as shown in Schedule JAC-3.
25

The Multi-Stage DCF

Q. Why did Staff implement the multi-stage DCF model to estimate CCWC's cost of equity?

A. Staff generally uses the multi-stage DCF model to consider the assumption that dividends may not grow at a constant rate. The multi-stage DCF uses two stages of growth; the first stage (near-term) having a duration of four years, followed by a second stage (long-term) of constant growth.

Q. What is the mathematical formula for the multi-stage DCF?

A. The multi-stage DCF formula is shown in the following equation:

Equation 7 :

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n} \left[\frac{1}{(1+K)} \right]^n$$

Where : P_0 = current stock price
 D_t = dividends expected during stage 1
 K = cost of equity
 n = years of non – constant growth
 D_n = dividend expected in year n
 g_n = constant rate of growth expected after year n

Q. What steps did Staff take to implement its multi-stage DCF cost of equity model?

A. First, Staff projected future dividends for each of the sample water utilities using near-term and long-term growth rates. Second, Staff calculated the rate (cost of equity) which equates the present value of the forecasted dividends to the current stock price for each of the sample water utilities. Lastly, Staff calculated an overall sample average cost of equity estimate.

1 **Q. How did Staff calculate near-term (stage-1) growth?**

2 A. The stage-1 growth rate is based on *Value Line*'s projected dividends for the next twelve
3 months, when available, and on the average dividend growth (g) rate of 5.2 percent,
4 calculated in Staff's constant DCF analysis for the remainder of the stage.

5
6 **Q. How did Staff estimate long-term (stage-2) growth?**

7 A. Staff calculated the stage-2 growth rate using the arithmetic mean rate of growth in Gross
8 Domestic Product ("GDP") from 1929 to 2012.¹³ Using the GDP growth rate assumes
9 that the water utility industry is expected to grow at the same rate as the overall economy.

10
11 **Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?**

12 A. Staff used 6.5 percent to estimate the stage-2 growth rate.

13
14 **Q. What is Staff's multi-stage DCF estimate for the sample utilities?**

15 A. Staff's multi-stage DCF estimate is 9.3 percent, as shown in Schedule JAC-3.

16
17 **Q. What is Staff's overall DCF estimate for the sample utilities?**

18 A. Staff's overall DCF estimate is 8.7 percent. Staff calculated the overall DCF estimate by
19 averaging the constant growth DCF (8.1%) and multi-stage DCF (9.3%) estimates, as
20 shown in Schedule JAC-3.

21

¹³ www.bea.doc.gov.

VII. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS

Q. What is the result of Staff's constant-growth DCF analysis to estimate the cost of equity for the sample water utilities?

A. Schedule JAC-3 shows the result of Staff's constant-growth DCF analysis. The result of Staff's constant-growth DCF analysis is as follows:

$$k = 2.9\% + 5.2\%$$

$$k = 8.1\%$$

Staff's constant-growth DCF estimate of the cost of equity for the sample water utilities is 8.1 percent.

Q. What is the result of Staff's multi-stage DCF analysis to estimate of the cost of equity for the sample utilities?

A. Schedule JAC-9 shows the result of Staff's multi-stage DCF analysis. The result of Staff's multi-stage DCF analysis is:

Company	Equity Cost Estimate (k)
American States Water	9.2%
California Water	9.4%
Aqua America	8.8%
Connecticut Water	9.5%
Middlesex Water	10.1%
SJW Corp	8.9%
York Water	<u>9.2%</u>
Average	9.3%

1 Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 9.3
2 percent.

3
4 **Q. What is Staff's overall DCF estimate of the cost of equity for the sample utilities?**

5 A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 8.7 percent.
6 Staff calculated an overall DCF cost of equity estimate by averaging Staff's constant
7 growth DCF (8.1 percent) and Staff's multi-stage DCF (9.3 percent) estimates, as shown
8 in Schedule JAC-3.

9
10 **VIII. FINAL COST OF EQUITY ESTIMATES FOR CCWC**

11 **Q. Please compare CCWC's capital structure to that of Staff's seven sample companies.**

12 A. The average capital structure for the sample water utilities is composed of 50.3 percent
13 debt and 49.7 percent equity, as shown in Schedule JAC-4. In contrast, CCWC's capital
14 structure is composed of 17.8 percent debt and 82.2 percent equity. Since the Company's
15 capital structure is less highly leveraged than that of the average sample water utility,
16 CCWC's stockholders bear *less* financial risk than do equity shareholders of the sample
17 utilities.

18
19 **Q. Does CCWC's reduced financial risk affect its cost of equity?**

20 A. Yes. As previously discussed, financial risk is a component of market risk and investors
21 require compensation for market risk. Since CCWC's financial risk exposure is less than
22 that of the sample average water utility, its cost of equity is *lower* than that of the sample
23 water companies. As noted earlier, Staff is recommending a hypothetical capital structure
24 consisting of 40 percent debt and 60 percent equity to give recognition to CCWC's
25 reduced exposure to financial risk.
26

1 **Q. Did Staff consider factors other than the results of its technical models in its cost of**
2 **equity analysis?**

3 A. Yes. In consideration of the relatively uncertain status of the economy and the market that
4 currently exists, Staff is proposing an upward economic assessment adjustment to the cost
5 of equity. In this case, Staff recommends a 60 basis point (0.6 percent) upward economic
6 assessment adjustment, as shown in Schedule JAC-3.

7
8 **Q. What is Staff's ROE estimate for CCWC?**

9 A. Staff determined an ROE estimate of 8.7 percent for CCWC based on cost of equity
10 estimates for the sample companies of 8.1 percent for the constant-growth DCF model and
11 9.3 percent for the multi-stage DCF model. Staff recommends adoption of a 60 basis
12 point upward economic assessment adjustment, resulting in a 9.3 percent Staff-
13 recommended cost of equity, as shown in Schedule JAC-3.

14
15 **IX. RATE OF RETURN RECOMMENDATION**

16 **Q. What overall rate of return did Staff determine for CCWC?**

17 A. Staff determined an 8.0 percent ROR for the Company, as shown in Schedule JAC-1 and
18 the following table:

19
20 **Table 3**

	Weight	Cost	Weighted Cost
Long-term Debt	40.0%	5.9%	2.4%
Common Equity	60.0%	9.3%	<u>5.6%</u>
Overall ROR			<u>8.0%</u>

X. STAFF RESPONSE TO COMPANY'S COST OF CAPITAL WITNESS MS. PAULINE M. AHERN

Q. Please summarize Ms. Ahern's analyses and recommendations.

A. Ms. Ahern recommends an 11.05 percent ROE based on estimates derived from the single-stage constant growth DCF method, two risk premium ("RPM") models (the Predictive Risk Premium Model ("PRPM") and a Risk Premium Model using an Adjusted Total Market Approach), and two CAPM models (the Traditional CAPM and the Empirical CAPM) for a proxy group of nine sample companies. Ms. Ahern derives an estimated cost of common equity of 8.84 percent from her DCF analysis, an estimated cost of common equity of 11.04 percent from her two RPM models, and an estimated cost of common equity of 10.75 percent from her two CAPM models. She concludes that the indicated cost of common equity to her sample group of companies before adjustments for risk is 10.48 percent, based upon the results obtained from her DCF, RPM and CAPM models. To this 10.48 percent indicated cost of equity figure, Ms. Ahern adds an upward 18 basis point credit risk adjustment and an upward 40 basis point business risk adjustment, thus arriving at an indicated cost of common equity of 11.06 percent. Ms. Ahern recommends a cost of common equity of 11.05 percent for CCWC. Her overall recommended rate of return for the Company is 10.21 percent.

For purposes of her single-stage constant growth DCF analysis, Ms. Ahern (i) relies exclusively on analysts' forecasts for EPS growth to estimate the dividend growth (g) component (See Exhibit PMA-1, Schedule 6, p. 1), (ii) utilizes a 60-day average stock price (P_0) to calculate an average dividend (D_0/P_0) yield (See Exhibit PMA-1, Schedule 6, p. 1, Note 1), and (iii) makes an upward semi-annual compounding adjustment to the expected dividend yield (D_1/P_0) component (See Exhibit PMA-1, Schedule 6, p. 1, Note 4).

1 For purposes of her CAPM, ECAPM and PRPM analyses, Ms. Ahern employs an inflated
2 risk free (R_f) rate of 4.27 percent, a figure derived by taking an average of the historical
3 income returns (5.28 percent) on 30-year U.S. Treasury Bonds covering the period, 1926-
4 2012, and the average forecasted 30-year U.S. Treasury yield (3.25 percent), obtained
5 from *Blue Chip Financial Forecasts* covering the 18-month period, Q1 2013 – Q2 2014
6 (See Exhibit PMA-1, Schedule 9, Page 2, Note 2).

7
8 **Q. Does Staff have any comments on Ms. Ahern's sole reliance on analysts' forecasts of**
9 **EPS growth to estimate the dividend growth rate (g) in her single-stage constant**
10 **growth DCF analysis?**

11 A. Yes. Exclusive reliance on analysts' forecasts of earnings growth to forecast DPS is
12 inappropriate because it assumes that investors do not look at other relevant information
13 such as historical dividend and earnings growth. Generally, analysts' forecasts are known
14 to be overly optimistic. Sole use of analysts' forecasts to calculate the expected dividend
15 growth rate, (g), serves to inflate that component of the DCF model and, consequently, the
16 estimated cost of equity. The appropriate growth rate to use in the DCF model is the
17 dividend growth rate expected by *investors*, not by analysts. Investors are assumed to be
18 rational, and as such will want to take into consideration all relevant available information
19 prior to making an investment decision. Therefore, it is reasonable to assume that
20 investors would consider both historical measures of past growth, as well as analysts'
21 forecasts of future growth.

22

1 **Q. Does Staff have evidence to support its assertion that exclusive reliance on analysts'**
2 **forecasts of earnings growth in the DCF model would result in inflated cost of equity**
3 **estimates?**

4 A. Yes. Experts in the financial community have commented on the optimism in analysts'
5 forecasts of future earnings.¹⁴ A study cited by David Dreman in his book *Contrarian*
6 *Investment Strategies: The Next Generation* found that *Value Line* analysts were
7 optimistic in their forecasts by 9 percent annually, on average for the 1987 – 1989 period.
8 Another study conducted by David Dreman found that between 1982 and 1997, analysts
9 overestimated the growth of earnings of companies in the S&P 500 by 188 percent.

10
11 Burton Malkiel, of Princeton University, conducted a study of the 1- and 5-year earnings
12 forecasts made by some of the most respected names in the investment business. His
13 results showed that when compared with actual earnings growth rates, the 5-year forecasts
14 made by professional analysts were far less accurate than estimates derived from several
15 naïve forecasting models, such as the long-run growth rate in national income. In the
16 following excerpt from his book, *A Random Walk Down Wall Street*, Professor Malkiel
17 discusses the results of his study:

18
19 When confronted with the poor record of their five-year growth
20 estimates, *the security analysts honestly, if sheepishly, admitted*
21 *that five years ahead is really too far in advance to make reliable*
22 *projections.* They protested that although long-term projections
23 are admittedly important, they really ought to be judged on their
24 ability to project earnings changes one year ahead. Believe it or
25 not, it turned out that their one-year forecasts were even worse than
26 their five-year projections.

¹⁴ See Seigel, Jeremy J. *Stocks for the Long Run*. 2002. McGraw-Hill. New York. p. 100. Dreman, David. *Contrarian Investment Strategies: The Next Generation*. 1998. Simon & Schuster. New York. pp. 97-98. Malkiel, Burton G. *A Random Walk Down Wall Street*. 2003. W.W. Norton & Co. New York. p. 175. Testimony of Professors Myron J. Gordon and Lawrence I. Gould, consultant to the Trial Staff (Common Carrier Bureau), FCC Docket 79-63, p. 95.

1 The analysts fought back gamely. They complained that it was
2 unfair to judge their performance on a wide cross section of
3 industries, because earnings for high-tech firms and various
4 "cyclical" companies are notoriously hard to forecast. "Try us on
5 utilities," one analyst confidently asserted. At the time they were
6 considered among the most stable group of companies because of
7 government regulation. So we tried it and they didn't like it. Even
8 the forecasts for the stable utilities were far off the mark.¹⁵
9 (Emphasis added)

10
11 **Q. Are investors aware of the problems related to analysts' forecasts?**

12 A. Yes. In addition to books, there are numerous published articles appearing in *The Wall*
13 *Street Journal* and other financial publications that cast doubt on the accuracy of research
14 analysts' forecasts.¹⁶ Investors, being keenly aware of these inherent biases in forecasts,
15 will use other methods to assess future growth.

16
17 **Q. Should DPS growth be considered in a DCF analysis?**

18 A. Yes. As previously stated in section VI of this testimony, the current market price of a
19 stock is equal to the present value of all expected future dividends, not future earnings.
20 Professor Jeremy Siegel from the Wharton School of Finance stated:

21
22 Note that the price of the stock is always equal to the present value
23 of all future *dividends* and not the present value of future earnings.
24 Earnings not paid to investors can have value only if they are paid
25 as dividends or other cash disbursements at a later date. Valuing
26 stock as the present discounted value of future earnings is
27 manifestly wrong and greatly overstates the value of the firm.¹⁷

28
¹⁵ Malkiel, Burton G. *A Random Walk Down Wall Street*. 2003. W.W. Norton & Co. New York. p. 175

¹⁶ See Smith, Randall & Craig, Suzanne. "Big Firms Had Research Ploy: Quiet Payments Among Rivals." *The Wall Street Journal*. April 30, 2003. Brown, Ken. "Analysts: Still Coming Up Rosy." *The Wall Street Journal*. January 27, 2003. p. C1. Karmin, Craig. "Profit Forecasts Become Anybody's Guess." *The Wall Street Journal*. January 21, 2003. p. C1. Gasparino, Charles. "Merrill Lynch Investigation Widens." *The Wall Street Journal*. April 11, 2002. p. C4. Elstein, Aaron. "Earnings Estimates Are All Over the Map." *The Wall Street Journal*. August 2, 2001. p. C1. Dreman, David. "Don't Count on those Earnings Forecasts." *Forbes*. January 26, 1998. p. 110.

¹⁷ Siegel, Jeremy J. *Stocks for the Long Run*. 2002. McGraw-Hill. New York. P. 93.

1 For valuation purposes, therefore, earnings paid out in the form of a dividend have
2 paramount relevancy to investors. Additionally, unlike earnings, dividends cannot be
3 manipulated or overstated. Thus, historical DPS growth should receive appropriate
4 consideration when estimating the market cost of equity in the DCF model.

5
6 **Q. Does Staff consider Ms. Ahern's use of a 60-day average stock price to be**
7 **appropriate for purposes of calculating the current dividend (D_0/P_0) yield in the**
8 **constant growth DCF model?**

9 A. No. The current dividend yield (D_0/P_0) component in the DCF model is better reflected by
10 using a current spot price, not an historical average stock price. Use of average stock
11 prices to calculate the current dividend yield employs stale information and is not
12 reflective of current investor expectations.

13
14 **Q. Turning to Ms. Ahern's CAPM, ECAPM and PRPM analyses, does Staff agree with**
15 **her use of a risk-free (R_f) rate derived from both historical measures and forecasted**
16 **estimates?**

17 A. No. The appropriate risk-free interest rate to be used is the current rate borne by investors
18 in the market. Ms. Ahern's use of a risk-free rate representing the average of an historical
19 measure and a forecasted estimate of the 30-year U.S. Treasury yield serves to overstate
20 the estimated market cost of equity derived from her CAPM, ECAPM and PRPM models.

21

1 **Q. What risk-free rate does Ms. Ahern use in her CAPM, ECAPM and PRPM risk**
2 **premium models?**

3 A. Ms. Ahern employs a risk-free (R_f) rate of 4.27 percent, a figure representing the historical
4 average of 30-year U.S Treasury Bond yields covering the period 1926-2012 (5.28%), as
5 reported by Morningstar, and the forecasted 30-year U.S Treasury yield (3.25%) projected
6 by *Blue Chip Financial Forecasts* covering the period Q1 2013 – Q2 2014. At present,
7 the current 30-year long-term spot Treasury yield is 3.59 percent,¹⁸ which suggests that
8 Ms. Ahern's cost of equity estimates derived from her CAPM, ECAPM and PRPM
9 models have been overstated by 68 basis points ($4.27\% - 3.59\% = 0.68\%$).

10
11 **Q. Based upon her cost of equity analysis, does Staff have reason to believe that Ms.**
12 **Ahern may have further overstated her indicated cost of common equity in this**
13 **proceeding?**

14 A. Yes. Ms. Ahern's indicated cost of common equity before adjustments for risk is based
15 upon estimates derived from her DCF (8.84%), RPM (11.04%) and CAPM (10.75%)
16 estimation methodologies. However, the 10.48 percent indicated cost of equity figure she
17 proposes (See Exhibit PMA-1, Schedule 1, Page 2 of 2, Line 5) exceeds the 10.21 percent
18 arithmetic mean calculated from the estimates derived from her models ($((8.84\% + 11.04\%$
19 $+ 10.75\%) / 3 = 10.21\%)$, and thus appears to be overstated by 27 basis points ($10.48\% -$
20 $10.21\% = 0.27\%$).

21
22 **Q. In her direct testimony, does Ms. Ahern explain how she weighted the cost of equity**
23 **estimates derived from her DCF, RPM and CAPM estimation methodologies in**
24 **order to arrive at a 10.48 percent indicated cost of equity?**

25 A. No, she does not. Ms. Ahern's direct testimony is silent as to this issue.

¹⁸ As of Staff's October 23, 2013 spot-price date, the yield on the 30-year U.S. Treasury Bond was 3.59 percent.

1 **Q. In light of the above, did Staff issue data requests to the Company inquiring as to**
2 **how, based upon the cost of equity estimates obtained from her DCF, RPM and**
3 **CAPM estimation methodologies, Ms. Ahern arrived at her 10.48 percent indicated**
4 **cost of common equity?**

5 A. Yes. Staff issued data request JAC-1.2 to the Company to elicit a response concerning
6 this issue. The attached Exhibit JAC-A presents the question(s) posed by Staff, and Ms.
7 Ahern's response. As can be seen, Ms. Ahern was evasive in her response, stating (in
8 part) that evaluating an investor's required return on common equity "is not a mechanistic,
9 mathematical exercise, but rather an exercise based upon informed, expert judgment," and
10 that in addition to taking into consideration "the mean and median costs of common equity
11 model results, she also considered the range of these results when formulating [her]
12 indicated cost of common equity cost rate..." Furthermore, Ms. Ahern went on to confirm
13 that her direct testimony was silent as to the 'computation' of her 10.48 percent indicated
14 cost of common equity.

15
16 **Q. Given Ms. Ahern's response to Staff data request JAC-1.2, how does Staff comment?**

17 A. Ms. Ahern may well have employed "expert judgment" and taken into consideration the
18 "range" of estimates derived from her DCF, RPM and CAPM models in arriving at her
19 10.48 percent indicated cost of equity, but the question then becomes why did she not
20 acknowledge having done so in her direct testimony. It should be noted that Exhibit
21 PMA-1, Schedule 8 (p. 1) presents a summary of Ms. Ahern's Risk Premium Model
22 (PRM) results, and while her 11.04 percent indicated risk premium derived common
23 equity cost rate *does not* represent the arithmetic mean of the cost of equity estimates
24 derived from her two RPM models (11.52% from the PRPM and 9.61% from the Risk
25 Premium Using an Adjusted Total Market Approach $(11.52\% + 9.61\%) / 2 = 10.57\%$), in
26 the narrative of her testimony Ms. Ahern does, in fact, *explain her rationale for placing*

1 *greater weight on the estimates derived from one model as opposed to giving equal weight*
2 *to both.*¹⁹ Thus, to the extent that Ms. Ahern elected not to use the arithmetic mean for
3 purposes of arriving at her indicated cost of common equity in Exhibit PMA-1, Schedule 1
4 (p. 2, line 5), at a bare minimum she has an obligation to explain her weighting
5 methodology for purposes of this rate proceeding, as her 10.48 percent indicated cost of
6 equity is evidence that she has weighted, disproportionately, the cost of equity estimates
7 derived from her DCF, RPM and CAPM estimation methodologies.

8
9 **Q. Does Staff have any comment regarding Ms. Ahern's proposed 18 basis point**
10 **upward credit risk adjustment?**

11 A. Yes. Ms. Ahern's proposed credit risk adjustment has no merit, as a 1994 study by S.
12 Brooks Marshall which investigated the relationship between equity risk and bond risk
13 concluded that bond ratings fail to explain a large portion of total equity risk (defined as
14 equity risk premiums and beta). Specifically, the author concluded:

15 "These data show that using a bond rating as the sole measure for
16 selecting a set of comparable companies for a cost-of-equity determination
17 will not necessarily produce a group of companies that have similar equity
18 risk. Most of this risk is explained by characteristics other than bond
19 ratings."²⁰
20

21
22 Accordingly, the proposed 18 basis point credit risk adjustment should be denied.
23

¹⁹ See Ahern Direct, p. 37, lines 7-10).

²⁰ Marshall, S. Brooks. "Bond Ratings: A Poor Predictor of Equity Risk," *Public Utilities Fortnightly*, Oct. 15, 1994, pp. 27-28.

1 **Q. Does Staff have any comment regarding Ms. Ahern's proposed 40 basis point**
2 **upward business risk adjustment?**

3 A. Yes. While Staff would agree with the general proposition that smaller companies are
4 riskier than larger companies, empirical research has demonstrated that a small company
5 risk premium adjustment to the cost of equity is unwarranted for regulated utilities.
6 Annie Wong, of Western Connecticut State University, conducted a study on utility
7 stocks to determine if the so-called size effect exists in the utility industry, and she writes
8 as follows:

9
10 The fact that the two samples show different, though weak, results
11 indicates that utility and industrial stocks do not share the same
12 characteristics. First, given firm size, utility stocks are consistently less
13 risky than industrial stocks. Second, industrial betas tend to decrease with
14 firm size but utility betas do not. These findings may be attributed to the
15 fact that all public utilities operate in an environment with regional
16 monopolistic power and regulated financial structure. As a result, the
17 business and financial risks are very similar among the utilities regardless
18 of their size. Therefore, utility betas would not necessarily be expected to
19 be related to firm size.

20
21 The object of this study is to examine if the size effect exists in the utility
22 industry. After controlling for equity values, there is some weak evidence
23 that firm size is a missing factor from the CAPM for the industrial but not
24 for the utility stocks. *This implies that although the size phenomenon has*
25 *been strongly documented for industrials, the findings suggest that there is*
26 *no need to adjust for the firm size in utility regulations. [emphasis*
27 *added].*²¹

28
29 To underscore this point, Paschall and Hawkins write as follows:

30
31 A size premium does not automatically apply in every case. Each privately
32 held company should be analyzed to determine if a size premium is
33 appropriate in its particular case. There can be unusual circumstances
34 where a small company has risk characteristics that make it far less risky

²¹ Annie Wong, "Utility Stock and the Size Effect: An Empirical Analysis," *Journal of the Midwest Finance Association*, (1993), p.98.

1 than the average company, warranting the use of a very low equity risk
2 premium. One possible example of this is a private water utility
3 (monopoly situation, very low risk, near-guarantee of payments).²²
4

5 **Q. Has the Commission previously ruled on the issue of firm size and whether it**
6 **warrants a risk premium adjustment to the cost of equity?**

7 A. Yes. The Commission previously ruled in Decision No. 64282²³ for Arizona Water that
8 firm size does not warrant recognition of a risk premium stating, "We do not agree with
9 the Company's proposal to assign a risk premium to Arizona Water based on its size
10 relative to other publicly traded water utilities...." The Commission confirmed its
11 previous ruling in Decision No. 64727²⁴ for Black Mountain Gas agreeing with Staff that
12 "the 'firm size phenomenon' does not exist for regulated utilities, and that therefore there
13 is no need to adjust for risk for small firm size in utility regulation." All companies have
14 firm-specific risks; therefore, the existence of unique risks for a company does not lead to
15 the conclusion that its total risk is greater than other entities. Moreover, as previously
16 discussed, investors cannot expect compensation for firm-specific risk since it can be
17 eliminated through diversification.
18

19 **Q. Does this conclude your direct testimony?**

20 A. Yes, it does.

²² Michael A. Paschall and George B. Hawkins, "Do Smaller Companies Warrant a Higher Discount Rate for Risk?: The 'Size Effect' Debate," *CCH Business Valuation Alert*, Vol. 1, Issue No. 2, December 1999.

²³ Dated December 28, 2001.

²⁴ Dated April 17, 2002.

Chaparral City Water Company Cost of Capital Calculation
Capital Structure
And Weighted Average Cost of Capital
Staff Recommended and Company Proposed

[A]	[B]	[C]	[D]
<u>Description</u>	<u>Weight (%)</u>	<u>Cost</u>	<u>Weighted Cost</u>
Staff Recommended Structure			
Debt	40.0%	5.9%	2.4%
Common Equity	60.0%	9.3%	5.6%
Weighted Average Cost of Capital			8.0%
Company Proposed Structure			
Debt	16.60%	5.97%	0.99%
Common Equity	83.40%	11.05%	9.22%
Weighted Average Cost of Capital			10.21%

[D] : [B] x [C]

Supporting Schedules: JAC-2, JAC-3 and JAC-4.

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1 MSN Money and Value Line

2 Schedule JAC-8

Chaparral City Water Company Cost of Capital Calculation
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
<u>Company</u>	<u>Debt</u>	<u>Common Equity</u>	<u>Total</u>
American States Water	43.3%	56.7%	100.0%
California Water	54.2%	45.8%	100.0%
Aqua America	55.2%	44.8%	100.0%
Connecticut Water	55.3%	44.7%	100.0%
Middlesex Water	43.1%	56.9%	100.0%
SJW Corp	56.2%	43.8%	100.0%
York Water	<u>45.0%</u>	<u>55.0%</u>	<u>100.0%</u>
 Average Sample Water Utilities	 50.3%	 49.7%	 100.0%
 Chaparral City - Actual Capital Structure	 17.8%	 82.2%	 100.0%

Source:

Sample Water Companies from Value Line

Chaparral City Water Company Cost of Capital Calculation
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
	Dividends Per Share 2002 to 2012	Dividends Per Share Projected	Earnings Per Share 2002 to 2012	Earnings Per Share Projected
<u>Company</u>	<u>DPS¹</u>	<u>DPS¹</u>	<u>EPS¹</u>	<u>EPS¹</u>
American States Water	3.9%	8.4%	7.7%	3.8%
California Water	1.2%	7.4%	5.0%	5.8%
Aqua America	7.7%	9.7%	7.3%	10.7%
Connecticut Water	1.7%	2.9%	3.2%	3.3%
Middlesex Water	1.6%	1.6%	2.1%	5.0%
SJW Corp	4.4%	4.9%	4.2%	6.3%
York Water	<u>4.4%</u>	<u>3.8%</u>	<u>6.1%</u>	<u>4.6%</u>
Average Sample Water Utilities	3.6%	5.5%	5.1%	5.6%

¹ Value Line

Chaparral City Water Company Cost of Capital Calculation
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
<u>Company</u>	Retention Growth 2002 to 2012 <u>br</u>	Retention Growth Projected <u>br</u>	Stock Financing Growth <u>vs</u>	Sustainable Growth 2002 to 2012 <u>br + vs</u>	Sustainable Growth Projected <u>br + vs</u>
American States Water	3.8%	5.2%	1.6%	5.4%	6.8%
California Water	2.4%	3.2%	1.6%	4.0%	4.8%
Aqua America	3.9%	5.3%	1.9%	5.8%	7.2%
Connecticut Water	2.0%	3.3%	4.0%	6.0%	7.3%
Middlesex Water	1.2%	2.8%	3.1%	4.3%	5.9%
SJW Corp	3.5%	3.8%	0.1%	3.6%	3.9%
York Water	<u>2.2%</u>	<u>2.8%</u>	<u>4.7%</u>	<u>6.8%</u>	<u>7.5%</u>
Average Sample Water Utilities	2.7%	3.8%	2.4%	5.1%	6.2%

[B]: Value Line

[C]: Value Line

[D]: Value Line, MSN Money, and Form 10-Ks filed with the Securities and Exchange Commission (<http://www.sec.gov/>)

[E]: [B]+[D]

[F]: [C]+[D]

Chaparral City Water Company Cost of Capital Calculation
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
		Spot Price		Mkt To	Value Line	Raw
Company	Symbol	10/23/2013	Book Value	Book	Beta	Beta
American States Water	AWR	27.76	11.86	2.3	0.70	0.52
California Water	CWT	21.28	11.69	1.8	0.65	0.45
Aqua America	WTR	25.18	8.00	3.1	0.60	0.37
Connecticut Water	CTWS	32.48	14.00	2.3	0.75	0.60
Middlesex Water	MSEX	21.10	12.05	1.8	0.70	0.52
SJW Corp	SJW	29.53	15.28	1.9	0.85	0.75
York Water	YORW	21.10	8.19	<u>2.6</u>	<u>0.70</u>	<u>0.52</u>
Average				2.3	0.71	0.53

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: $(-0.35 + [F]) / 0.67$

Chaparral City Water Company Cost of Capital Calculation
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A]	[B]
<u>Description</u>	<u>g</u>
DPS Growth - Historical ¹	3.6%
DPS Growth - Projected ¹	5.5%
EPS Growth - Historical ¹	5.1%
EPS Growth - Projected ¹	5.6%
Sustainable Growth - Historical ²	5.1%
<u>Sustainable Growth - Projected²</u>	<u>6.2%</u>
Average	5.2%

¹ Schedule JAC-5

² Schedule JAC-6

Chaparral City Water Company Cost of Capital Calculation
Multi-Stage DCF Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
<u>Company</u>	Current Mkt. Price (P_0) ¹ 10/23/2013	Projected Dividends ² (Stage 1 growth) (D_t)				Stage 2 growth ³ (g_n)	Equity Cost Estimate (K) ⁴
		d_1	d_2	d_3	d_4		
American States Water	27.8	0.76	0.80	0.84	0.89	6.5%	9.2%
California Water	21.3	0.65	0.68	0.71	0.75	6.5%	9.4%
Aqua America	25.2	0.59	0.62	0.66	0.69	6.5%	8.8%
Connecticut Water	32.5	1.01	1.07	1.12	1.18	6.5%	9.5%
Middlesex Water	21.1	0.79	0.83	0.87	0.92	6.5%	10.1%
SJW Corp	29.5	0.73	0.77	0.81	0.85	6.5%	8.9%
York Water	21.1	0.58	0.61	0.64	0.68	6.5%	9.2%

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n} \left[\frac{1}{(1+K)} \right]^n$$

Average **9.3%**

Where : P_0 = current stock price
 D_t = dividends expected during stage 1
 K = cost of equity
 n = years of non -- constant growth
 D_n = dividend expected in year n
 g_n = constant rate of growth expected after year n

1 [B] see Schedule JAC-7

2 Derived from Value Line Information

3 Average annual growth in GDP 1929 - 2012 in current dollars.

4 Internal Rate of Return of Projected Dividends

EXHIBIT

JAC-A

COMPANY: CHAPARRAL CITY WATER COMPANY
DOCKET NO: W-02113A-13-0118

Response provided by: Pauline Ahern

Title: Consultant for CCWC

Address: 2355 W. Pinnacle Peak Road, Suite 300
Phoenix, AZ 85027

Company Response Number: STF JAC 1.2

Q: In Ms. Ahern's testimony (see Table 2, p. 7) and Exhibit PMA-1, Schedule 1, (p. 1 of 2), the indicated cost of equity cost rate before consideration of adjustments for credit/business risk is 10.48%. Ms. Ahern arrived at this 10.48% cost rate utilizing estimates derived from three different cost of equity methodologies: DCF (8.84%), Risk Premium Model (11.04%), and CAPM (10.75%). However, the arithmetic mean of those three estimates equate to cost of equity of 10.21% $((8.84\% + 11.04\% + 10.75\%) / 3 = 10.21\%)$, a figure 27 basis points lower than her 10.48% figure. In light of this fact, please indicate:

- a) The reason(s) why Ms. Ahern elected to use a mathematical computation other than the arithmetic mean of her 10.48% indicated cost of common equity; and
- b) Identify where, in the narrative of her Direct Testimony, Ms. Ahern provides an explanation of the computation used to calculate her 10.48% indicated cost of common equity.

A: a) The evaluation of the investors' required rate of return on their common stock investment, i.e., cost rate of common equity capital, is not a mechanistic, mathematical exercise, but rather an exercise based upon informed, expert judgment. Therefore, in an attempt to emulate investor behavior, Ms. Ahern did not simply rely upon a mechanical calculation of the average or median of the results of her application of multiple cost of common equity cost rate models. Instead, in addition to considering the mean and median costs of common equity model results, she also considered the range of these results when formulating an indicated common equity cost rate before adjustment for the increased investment risk of Chaparral City Water Company.

- b) Ms. Ahern does not provide an explanation of the "computation" of the 10.48% indicated common equity cost rate before adjustment for increase investment risk in her Direct Testimony.